

FBRIC54.003APC\_Sequence Listing.txt  
SEQUENCE LISTING

<110> Schofield, Peter  
Blair, Ian

<120> ASSAY FOR BIPOLAR AFFECTIVE DISORDER

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<151> 2004-01-23

<150> PCT/AU2005/000078

<151> 2005-01-24

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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FBRIC54.003APC\_Sequence Listing.txt

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acgcgcgagc ccggcgaggc cccggcaggc ccgtccctgc tcgggggagc gctgagacgg 120
cgggtgagct ccacgagagc gccgtcgcca cttcgggcca actttgagat tcccagacagt 180
taagca atg ggg aga cat ttg gct ttg ctc ctg ctt ctg ctc ctt ctc 228
      Met Gly Arg His Leu Ala Leu Leu Leu Leu Leu Leu Leu
      1          5          10

ttc caa cat ttt gga gac agt gat ggc agc caa cga ctt gaa cag act 276
Phe Gln His Phe Gly Asp Ser Asp Gly Ser Gln Arg Leu Glu Gln Thr
15          20          25          30

cct ctg cag ttt aca cac ctc gag tac aac gtc acc gtg cag gag aac 324
Pro Leu Gln Phe Thr His Leu Glu Tyr Asn Val Thr Val Gln Glu Asn
35          40          45

tct gca gct aag act tat gtg ggg cat cct gtc aag atg ggt gtt tac 372
Ser Ala Ala Lys Thr Tyr Val Gly His Pro Val Lys Met Gly Val Tyr

```



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	50	55	60	
	att aca cat cca gcg tgg gaa gta agg tac aaa att gtt tcc gga gac			420
	Ile Thr His 65 Pro Ala Trp Glu Val 70 Arg Tyr Lys Ile Val 75 Ser Gly Asp			
	agt gaa aac ctg ttc aaa gct gaa gag tac att ctc gga gac ttt tgc			468
	Ser Glu 80 Asn Leu Phe Lys Ala 85 Glu Glu Tyr Ile Leu 90 Gly Asp Phe Cys			
	ttt cta aga ata agg acc aaa gga gga aat aca gct att ctt aat aga			516
	Phe Leu Arg Ile Arg Thr 100 Lys Gly Gly Asn Thr 105 Ala Ile Leu Asn Arg 110			
	gaa gtg aag gat cac tac aca ttg ata gtg aaa gca ctt gaa aaa aat			564
	Glu Val Lys Asp His 115 Tyr Thr Leu Ile Val 120 Lys Ala Leu Glu Lys Asn 125			
	act aat gtg gag gcg cga aca aag gtc agg gtg cag gtg ctg gat aca			612
	Thr Asn Val 130 Glu Ala Arg Thr Lys Val 135 Arg Val Gln Val 140 Leu Asp Thr			
	aat gac ttg aga ccg tta ttc tca ccc acc tca tac agc gtt tct tta			660
	Asn Asp Leu 145 Arg Pro Leu Phe Ser 150 Pro Thr Ser Tyr Ser 155 Val Ser Leu			
	cct gaa aac aca gct ata agg acc agt atc gca aga gtc agc gcc acg			708
	Pro Glu 160 Asn Thr Ala Ile Arg Thr Ser Ile Ala Arg Val 170 Ser Ala Thr			
	gat gca gac ata gga acc aac ggg gaa ttt tac tac agt ttt aaa gat			756
	Asp Ala Asp Ile Gly Thr 180 Asn Gly Glu Phe Tyr 185 Tyr Ser Phe Lys Asp 190			
	cga aca gat atg ttt gct att cac cca acc agt ggt gtg ata gtg tta			804
	Arg Thr Asp Met Phe 195 Ala Ile His Pro Thr 200 Ser Gly Val Ile Val 205 Leu			
	act ggt aga ctt gat tac cta gag acc aag ctc tat gag atg gaa atc			852
	Thr Gly Arg Leu 210 Asp Tyr Leu Glu Thr 215 Lys Leu Tyr Glu Met 220 Glu Ile			
	ctc gct gcg gac cgt ggc atg aag ttg tat ggg agc agt ggc atc agc			900
	Leu Ala 225 Asp Arg Gly Met Lys Leu Tyr Gly Ser Ser 235 Gly Ile Ser			
	agc atg gcc aag cta acg gtg cac atc gaa cag gcc aat gaa tgt gct			948
	Ser Met 240 Ala Lys Leu Thr Val 245 His Ile Glu Gln Ala Asn Glu Cys Ala			
	ccg gtg ata aca gca gtg aca ttg tca cca tca gaa ctg gac agg gac			996
	Pro Val Ile Thr Ala Val 260 Thr Leu Ser Pro Ser 265 Glu Leu Asp Arg Asp 270			
	cca gca tat gca att gtg aca gtg gat gac tgc gat cag ggt gcc aat			1044
	Pro Ala Tyr Ala Ile Val Thr Val Asp Asp 280 Cys Asp Gln Gly Ala Asn 285			
	ggt gac ata gca tct tta agc atc gtg gca ggt gac ctt ctc cag cag			1092
	Gly Asp Ile Ala Ser Leu Ser Ile Val 295 Ala Gly Asp Leu Leu 300 Gln Gln			
	ttt aga aca gtg agg tcc ttt cca ggg agt aag gag tat aaa gtc aaa			1140

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Phe	Arg	Thr	Val	Arg	Ser	Phe	Pro	Gly	Ser	Lys	Glu	Tyr	Lys	Val	Lys	
		305					310					315				
gcc	atc	ggt	gac	att	gat	tgg	gac	agt	cat	cct	ttc	ggc	tac	aat	ctc	1188
Ala	Ile	Gly	Asp	Ile	Asp	Trp	Asp	Ser	His	Pro	Phe	Gly	Tyr	Asn	Leu	
		320				325					330					
aca	cta	cag	gct	aaa	gat	aaa	gga	act	ccg	ccc	cag	ttc	tct	tct	gtt	1236
Thr	Leu	Gln	Ala	Lys	Asp	Lys	Gly	Thr	Pro	Pro	Gln	Phe	Ser	Ser	Val	
					340					345					350	
aaa	gtc	att	cac	gtg	act	tct	cca	cag	ttc	aaa	gcc	ggg	cca	gtc	aag	1284
Lys	Val	Ile	His	Val	Thr	Ser	Pro	Gln	Phe	Lys	Ala	Gly	Pro	Val	Lys	
				355					360					365		
ttt	gaa	aag	gat	gtt	tac	aga	gca	gaa	ata	agt	gaa	ttt	gct	cct	ccc	1332
Phe	Glu	Lys	Asp	Val	Tyr	Arg	Ala	Glu	Ile	Ser	Glu	Phe	Ala	Pro	Pro	
			370					375					380			
aac	aca	cct	gtg	gtc	atg	gta	aag	gcc	att	cct	gct	tat	tcc	cat	ttg	1380
Asn	Thr	Pro	Val	Val	Met	Val	Lys	Ala	Ile	Pro	Ala	Tyr	Ser	His	Leu	
		385					390					395				
agg	tat	gtt	ttt	aaa	agg	aca	cct	gga	aaa	gct	aaa	ttc	agt	tta	aat	1428
Arg	Tyr	Val	Phe	Lys	Arg	Thr	Pro	Gly	Lys	Ala	Lys	Phe	Ser	Leu	Asn	
		400				405					410					
tac	aac	act	ggt	ctc	att	tct	att	tta	gaa	cca	gtt	aaa	aga	cag	cag	1476
Tyr	Asn	Thr	Gly	Leu	Ile	Ser	Ile	Leu	Glu	Pro	Val	Lys	Arg	Gln	Gln	
		415			420					425					430	
gca	gcc	cat	ttt	gaa	ctt	gaa	gta	aca	aca	agt	gac	aga	aaa	gcg	tcc	1524
Ala	Ala	His	Phe	Glu	Leu	Glu	Val	Thr	Thr	Ser	Asp	Arg	Lys	Ala	Ser	
				435				440						445		
acc	aag	gtc	ttg	gtg	aaa	gtc	tta	ggt	gca	aat	agc	aat	ccc	cct	gaa	1572
Thr	Lys	Val	Leu	Val	Lys	Val	Leu	Gly	Ala	Asn	Ser	Asn	Pro	Pro	Glu	
			450					455					460			
ttt	acc	cag	aca	gcg	tac	aaa	gct	gct	ttt	gat	gag	aac	gtg	ccc	att	1620
Phe	Thr	Gln	Thr	Ala	Tyr	Lys	Ala	Ala	Phe	Asp	Glu	Asn	Val	Pro	Ile	
		465					470					475				
ggt	act	act	atc	atg	agc	ctg	agt	gcc	gta	gac	cct	gat	gag	ggt	gag	1668
Gly	Thr	Thr	Ile	Met	Ser	Leu	Ser	Ala	Val	Asp	Pro	Asp	Glu	Gly	Glu	
		480				485					490					
aat	ggg	tac	gtg	aca	tac	agt	atc	gca	aat	tta	aat	cat	gtg	ccg	ttt	1716
Asn	Gly	Tyr	Val	Thr	Tyr	Ser	Ile	Ala	Asn	Leu	Asn	His	Val	Pro	Phe	
					500					505					510	
gcg	att	gac	cat	ttc	act	ggt	gcc	gtg	agt	acg	tca	gaa	aac	ctg	gac	1764
Ala	Ile	Asp	His	Phe	Thr	Gly	Ala	Val	Ser	Thr	Ser	Glu	Asn	Leu	Asp	
				515					520					525		
tac	gaa	ctg	atg	cct	cgg	gtt	tat	act	ctg	agg	att	cgt	gca	tca	gac	1812
Tyr	Glu	Leu	Met	Pro	Arg	Val	Tyr	Thr	Leu	Arg	Ile	Arg	Ala	Ser	Asp	
			530					535					540			
tgg	ggc	ttg	ccg	tac	cgc	cgg	gaa	gtc	gaa	gtc	ctt	gct	aca	att	act	1860
Trp	Gly	Leu	Pro	Tyr	Arg	Arg	Glu	Val	Glu	Val	Leu	Ala	Thr	Ile	Thr	
		545					550					555				

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ctc	aat	aac	ttg	aat	gac	aac	aca	cct	ttg	ttt	gag	aaa	ata	aat	tgt	1908
Leu	Asn	Asn	Leu	Asn	Asp	Asn	Thr	Pro	Leu	Phe	Glu	Lys	Ile	Asn	Cys	
560					565						570					
gaa	ggg	aca	att	ccc	aga	gat	cta	ggc	gtg	gga	gag	caa	ata	acc	act	1956
Glu	Gly	Thr	Ile	Pro	Arg	Asp	Leu	Gly	Val	Gly	Glu	Gln	Ile	Thr	Thr	
575					580					585					590	
gtt	tct	gct	att	gat	gca	gat	gaa	ctt	cag	ttg	gta	cag	tat	cag	att	2004
Val	Ser	Ala	Ile	Asp	Ala	Asp	Glu	Leu	Gln	Leu	Val	Gln	Tyr	Gln	Ile	
				595					600					605		
gaa	gct	gga	aat	gaa	ctg	gat	ttg	ttt	agt	tta	aac	ccc	aac	tcg	ggg	2052
Glu	Ala	Gly	Asn	Glu	Leu	Asp	Leu	Phe	Ser	Leu	Asn	Pro	Asn	Ser	Gly	
			610					615					620			
gta	ttg	tca	tta	aag	cga	tcg	cta	atg	gat	ggc	tta	ggt	gca	aag	gtg	2100
Val	Leu	Ser	Leu	Lys	Arg	Ser	Leu	Met	Asp	Gly	Leu	Gly	Ala	Lys	Val	
		625					630					635				
tct	ttc	cac	agt	ctg	aga	atc	aca	gct	aca	gat	gga	gaa	aat	ttt	gcc	2148
Ser	Phe	His	Ser	Leu	Arg	Ile	Thr	Ala	Thr	Asp	Gly	Glu	Asn	Phe	Ala	
	640					645					650					
aca	cca	tta	tat	atc	aac	ata	aca	gtg	gct	gcc	agt	cac	aag	ctg	gta	2196
Thr	Pro	Leu	Tyr	Ile	Asn	Ile	Thr	Val	Ala	Ala	Ser	His	Lys	Leu	Val	
655					660					665					670	
aac	ttg	cag	tgt	gaa	gag	act	ggt	gtt	gcc	aaa	atg	ctg	gca	gag	aag	2244
Asn	Leu	Gln	Cys	Glu	Glu	Thr	Gly	Val	Ala	Lys	Met	Leu	Ala	Glu	Lys	
				675				680						685		
ctc	ctg	cag	gca	aat	aaa	tta	cac	aac	cag	gga	gag	gtg	gag	gat	att	2292
Leu	Leu	Gln	Ala	Asn	Lys	Leu	His	Asn	Gln	Gly	Glu	Val	Glu	Asp	Ile	
			690					695					700			
ttc	ttc	gat	tct	cac	tct	gtc	aat	gct	cac	ata	ccg	cag	ttt	aga	agc	2340
Phe	Phe	Asp	Ser	His	Ser	Val	Asn	Ala	His	Ile	Pro	Gln	Phe	Arg	Ser	
		705					710					715				
act	ctt	ccg	act	ggt	att	cag	gta	aag	gaa	aac	cag	cct	gtg	ggt	tcc	2388
Thr	Leu	Pro	Thr	Gly	Ile	Gln	Val	Lys	Glu	Asn	Gln	Pro	Val	Gly	Ser	
	720					725					730					
agt	gta	att	ttc	atg	aac	tcc	act	gac	ctt	gac	act	ggc	ttc	aat	gga	2436
Ser	Val	Ile	Phe	Met	Asn	Ser	Thr	Asp	Leu	Asp	Thr	Gly	Phe	Asn	Gly	
735					740					745					750	
aaa	ctg	gtc	tat	gct	gtt	tct	gga	gga	aat	gag	gat	agt	tgc	ttc	atg	2484
Lys	Leu	Val	Tyr	Ala	Val	Ser	Gly	Gly	Asn	Glu	Asp	Ser	Cys	Phe	Met	
				755					760					765		
att	gat	atg	gaa	aca	gga	atg	ctg	aaa	att	tta	tct	cct	ctt	gac	cgt	2532
Ile	Asp	Met	Glu	Thr	Gly	Met	Leu	Lys	Ile	Leu	Ser	Pro	Leu	Asp	Arg	
			770					775					780			
gaa	aca	aca	gac	aaa	tac	acc	ctg	aat	att	acc	gtc	tat	gac	ctt	ggg	2580
Glu	Thr	Thr	Asp	Lys	Tyr	Thr	Leu	Asn	Ile	Thr	Val	Tyr	Asp	Leu	Gly	
			785				790					795				
ata	ccc	cag	aag	gct	gcg	tgg	cgt	ctt	cta	cat	gtc	gtg	gtt	gtc	gat	2628
Ile	Pro	Gln	Lys	Ala	Ala	Trp	Arg	Leu	Leu	His	Val	Val	Val	Val	Asp	
800						805					810					

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gcc Ala 815	aat Asn	gat Asp	aat Asn	cca Pro	ccc Pro 820	gag Glu	ttt Phe	tta Leu	cag Gln 825	gag Glu 825	agc Ser	tat Tyr	ttt Phe	gtg Val	gaa Glu 830	2676
gtg Val	agt Ser	gaa Glu	gac Asp	aag Lys 835	gag Glu	gta Val	cat His	agt Ser	gaa Glu 840	atc Ile	atc Ile	cag Gln	gtt Val	gaa Glu 845	gcc Ala	2724
aca Thr	gat Asp	aaa Lys	gac Asp 850	ctg Leu	ggg Gly	ccc Pro	aac Asn	gga Gly 855	cac His	gtg Val	acg Thr	tac Tyr	tca Ser 860	att Ile	ctt Leu	2772
aca Thr	gac Asp	aca Thr 865	gac Asp	aca Thr	ttt Phe	tca Ser	att Ile 870	gac Asp	agc Ser	gtg Val	acg Thr	ggt Gly 875	gtt Val	gtt Val	aac Asn	2820
atc Ile 880	gca Ala	cgc Arg	cct Pro	ctg Leu	gat Asp	cga Arg 885	gag Glu	ctg Leu	cag Gln	cat His	gag Glu 890	cac His	tcc Ser	tta Leu	aag Lys	2868
att Ile 895	gag Glu	gcc Ala	agg Arg	gac Asp	caa Gln 900	gcc Ala	aga Arg	gaa Glu	gag Glu	cct Pro 905	cag Gln	ctg Leu	ttc Phe	tcc Ser	act Thr 910	2916
gtc Val	gtt Val	gtg Val	aaa Lys	gta Val 915	tca Ser	cta Leu	gaa Glu	gat Asp	gtt Val 920	aat Asn	gac Asp	aac Asn	cca Pro	cct Pro 925	aca Thr	2964
ttt Phe	att Ile	cca Pro	cct Pro 930	aat Asn	tat Tyr	cgt Arg	gtg Val 935	aaa Lys	gtc Val	cga Arg	gag Glu	gat Asp	ctt Leu 940	cca Pro	gaa Glu	3012
gga Gly	acc Thr	gtc Val 945	atc Ile	atg Met	tgg Trp	tta Leu	gaa Glu 950	gcc Ala	cac His	gat Asp	cct Pro	gat Asp 955	tta Leu	ggt Gly	cag Gln	3060
tct Ser	ggt Gly 960	cag Gln	gtg Val	aga Arg	tac Tyr	agc Ser 965	ctt Leu	ctg Leu	gac Asp	cac His	gga Gly 970	gaa Glu	gga Gly	aac Asn	ttc Phe	3108
gat Asp 975	gtg Val	gat Asp	aaa Lys	ctc Leu	agt Ser 980	gga Gly	gca Ala	gtt Val	agg Arg	atc Ile 985	gtc Val	cag Gln	cag Gln	ttg Leu	gac Asp 990	3156
ttt Phe	gag Glu	aag Lys	aag Lys	caa Gln 995	gtg Val	tat Tyr	aat Asn	ctc Leu	act Thr 1000	gtg Val	agg Arg	gcc Ala	aaa Lys	gac Asp 1005	aag Lys	3204
gga Gly	aag Lys	cca Pro	gtt Val 1010	tct Ser	ctg Leu	tct Ser	tct Ser	act Thr 1015	tgc Cys	tat Tyr	gtt Val	gaa Glu	gtt Val 1020	gag Glu		3249
gtg Val	gtt Val	gat Asp	gtg Val 1025	aat Asn	gag Glu	aac Asn	ctg Leu	cac His 1030	cca Pro	ccc Pro	gtg Val	ttt Phe	tcc Ser 1035	agc Ser		3294
ttt Phe	gtg Val	gaa Glu	aag Lys 1040	ggg Gly	aca Thr	gtg Val	aaa Lys	gaa Glu 1045	gat Asp	gca Ala	cct Pro	gtt Val	ggt Gly 1050	tca Ser		3339
ttg Leu	gta Val	atg Met	acg Thr	gtg Val	tcg Ser	gct Ala	cat His	gat Asp	gag Glu	gac Asp	gcc Ala	gga Gly	aga Arg	gat Asp		3384

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1055				1060				1065							
ggg	gag	atc	cga	tac	tcc	att	aga	gat	ggc	tct	ggc	gtt	ggt	gtt	3429
Gly	Glu	Ile	Arg	Tyr	Ser	Ile	Arg	Asp	Gly	Ser	Gly	Val	Gly	Val	
			1070					1075					1080		
ttc	aaa	ata	ggt	gaa	gag	aca	ggt	gtc	ata	gag	acg	tca	gat	cga	3474
Phe	Lys	Ile	Gly	Glu	Glu	Thr	Gly	Val	Ile	Glu	Thr	Ser	Asp	Arg	
			1085					1090					1095		
ctg	gac	cgt	gaa	tcg	acc	tcc	cat	tat	tgg	cta	aca	gtc	ttt	gca	3519
Leu	Asp	Arg	Glu	Ser	Thr	Ser	His	Tyr	Trp	Leu	Thr	Val	Phe	Ala	
			1100					1105					1110		
acc	gat	cag	ggt	gtc	gtg	cct	ctt	tca	tcg	ttc	ata	gag	atc	tac	3564
Thr	Asp	Gln	Gly	Val	Val	Pro	Leu	Ser	Ser	Phe	Ile	Glu	Ile	Tyr	
			1115					1120					1125		
ata	gag	gtt	gag	gat	gtc	aat	gac	aat	gca	cca	cag	aca	tca	gag	3609
Ile	Glu	Val	Glu	Asp	Val	Asn	Asp	Asn	Ala	Pro	Gln	Thr	Ser	Glu	
			1130					1135					1140		
cct	gtt	tat	tac	cca	gaa	atc	atg	gaa	aat	tct	cct	aaa	gat	gta	3654
Pro	Val	Tyr	Tyr	Pro	Glu	Ile	Met	Glu	Asn	Ser	Pro	Lys	Asp	Val	
			1145					1150					1155		
tct	gtg	gtc	cag	atc	gag	gca	ttt	gat	cca	gat	tcg	agc	tct	aat	3699
Ser	Val	Val	Gln	Ile	Glu	Ala	Phe	Asp	Pro	Asp	Ser	Ser	Ser	Asn	
			1160					1165					1170		
gac	aag	ctc	atg	tac	aaa	att	aca	agt	gga	aat	cca	caa	gga	ttc	3744
Asp	Lys	Leu	Met	Tyr	Lys	Ile	Thr	Ser	Gly	Asn	Pro	Gln	Gly	Phe	
			1175					1180					1185		
ttt	tca	ata	cat	cct	aaa	aca	ggt	ctc	atc	aca	act	acg	tca	agg	3789
Phe	Ser	Ile	His	Pro	Lys	Thr	Gly	Leu	Ile	Thr	Thr	Thr	Ser	Arg	
			1190					1195					1200		
aag	cta	gac	cga	gaa	cag	caa	gat	gaa	cac	ata	tta	gag	gtt	act	3834
Lys	Leu	Asp	Arg	Glu	Gln	Gln	Asp	Glu	His	Ile	Leu	Glu	Val	Thr	
			1205					1210					1215		
gtg	aca	gac	aat	ggt	agt	ccc	ccc	aaa	tca	acc	att	gca	aga	gtc	3879
Val	Thr	Asp	Asn	Gly	Ser	Pro	Pro	Lys	Ser	Thr	Ile	Ala	Arg	Val	
			1220					1225					1230		
att	gtg	aaa	atc	ctt	gat	gaa	aat	gac	aac	aaa	cct	cag	ttt	ctg	3924
Ile	Val	Lys	Ile	Leu	Asp	Glu	Asn	Asp	Asn	Lys	Pro	Gln	Phe	Leu	
			1235					1240					1245		
caa	aag	ttc	tac	aaa	atc	aga	ctc	cct	gag	cgg	gaa	aag	cca	gac	3969
Gln	Lys	Phe	Tyr	Lys	Ile	Arg	Leu	Pro	Glu	Arg	Glu	Lys	Pro	Asp	
			1250					1255					1260		
cga	gaa	aga	aat	gcc	aga	cgg	gag	ccg	ctc	tat	cgc	gtc	ata	gcc	4014
Arg	Glu	Arg	Asn	Ala	Arg	Arg	Glu	Pro	Leu	Tyr	Arg	Val	Ile	Ala	
			1265					1270					1275		
acc	gac	aag	gat	gag	ggc	ccc	aat	gca	gaa	atc	tcc	tac	agc	atc	4059
Thr	Asp	Lys	Asp	Glu	Gly	Pro	Asn	Ala	Glu	Ile	Ser	Tyr	Ser	Ile	
			1280					1285					1290		
gaa	gac	ggg	aat	gag	cat	ggc	aaa	ttt	ttc	atc	gaa	ccg	aaa	act	4104

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Glu	Asp	Gly	Asn	Glu	His	Gly	Lys	Phe	Phe	Ile	Glu	Pro	Lys	Thr	
			1295					1300					1305		
gga	gtg	gtt	tcg	tcc	aag	agg	ttt	tca	gca	gct	gga	gaa	tat	gat	4149
Gly	Val	Val	Ser	Ser	Lys	Arg	Phe	Ser	Ala	Ala	Gly	Glu	Tyr	Asp	
			1310					1315					1320		
att	ctt	tca	att	aag	gca	gtt	gac	aat	ggg	cgc	cct	caa	aag	tca	4194
Ile	Leu	Ser	Ile	Lys	Ala	Val	Asp	Asn	Gly	Arg	Pro	Gln	Lys	Ser	
			1325					1330					1335		
tca	acc	acc	aga	ctc	cat	att	gaa	tgg	atc	tcc	aag	ccc	aaa	cag	4239
Ser	Thr	Thr	Arg	Leu	His	Ile	Glu	Trp	Ile	Ser	Lys	Pro	Lys	Gln	
			1340					1345					1350		
tcc	ctg	gag	ccc	att	tca	ttt	gaa	gaa	tca	ttt	ttt	acc	ttt	act	4284
Ser	Leu	Glu	Pro	Ile	Ser	Phe	Glu	Glu	Ser	Phe	Phe	Thr	Phe	Thr	
			1355					1360					1365		
gtg	atg	gaa	agt	gac	ccc	gtt	gct	cac	atg	att	gga	gta	ata	tct	4329
Val	Met	Glu	Ser	Asp	Pro	Val	Ala	His	Met	Ile	Gly	Val	Ile	Ser	
			1370					1375					1380		
gtg	gag	cct	cct	ggc	ata	ccc	ctt	tgg	ttt	gac	atc	act	ggt	ggc	4374
Val	Glu	Pro	Pro	Gly	Ile	Pro	Leu	Trp	Phe	Asp	Ile	Thr	Gly	Gly	
			1385					1390					1395		
aac	tac	gac	agt	cac	ttc	gat	gtg	gac	aag	gga	act	gga	acc	atc	4419
Asn	Tyr	Asp	Ser	His	Phe	Asp	Val	Asp	Lys	Gly	Thr	Gly	Thr	Ile	
			1400					1405					1410		
att	gtt	gcc	aaa	cct	ctt	gat	gca	gaa	cag	aag	tca	aac	tac	aac	4464
Ile	Val	Ala	Lys	Pro	Leu	Asp	Ala	Glu	Gln	Lys	Ser	Asn	Tyr	Asn	
			1415					1420					1425		
ctc	aca	gtc	gag	gct	aca	gat	gga	acc	acc	act	atc	ctc	act	cag	4509
Leu	Thr	Val	Glu	Ala	Thr	Asp	Gly	Thr	Thr	Thr	Ile	Leu	Thr	Gln	
			1430					1435					1440		
gta	ttc	atc	aaa	gta	ata	gac	aca	aat	gac	cat	cgt	cct	cag	ttt	4554
Val	Phe	Ile	Lys	Val	Ile	Asp	Thr	Asn	Asp	His	Arg	Pro	Gln	Phe	
			1445					1450					1455		
tct	aca	tca	aag	tat	gaa	gtt	gtt	att	cct	gaa	gat	aca	gcg	cca	4599
Ser	Thr	Ser	Lys	Tyr	Glu	Val	Val	Ile	Pro	Glu	Asp	Thr	Ala	Pro	
			1460					1465					1470		
gaa	aca	gaa	att	ttg	caa	atc	agt	gct	gtg	gat	cag	gat	gag	aaa	4644
Glu	Thr	Glu	Ile	Leu	Gln	Ile	Ser	Ala	Val	Asp	Gln	Asp	Glu	Lys	
			1475					1480					1485		
aac	aaa	cta	atc	tac	act	ctg	cag	agc	agt	aga	gat	cca	ctg	agt	4689
Asn	Lys	Leu	Ile	Tyr	Thr	Leu	Gln	Ser	Ser	Arg	Asp	Pro	Leu	Ser	
			1490					1495					1500		
ctc	aag	aaa	ttt	cgt	ctt	gat	cct	gca	acc	ggc	tct	ctc	tat	act	4734
Leu	Lys	Lys	Phe	Arg	Leu	Asp	Pro	Ala	Thr	Gly	Ser	Leu	Tyr	Thr	
			1505					1510					1515		
tct	gag	aaa	ctg	gat	cat	gaa	gct	gtt	tca	cca	gca	cac	ctc	acg	4779
Ser	Glu	Lys	Leu	Asp	His	Glu	Ala	Val	Ser	Pro	Ala	His	Leu	Thr	
			1520					1525					1530		

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gtc atg gta cga gat caa gat gtg cct gta aaa cgc aac ttt gca	4824
Val Met Val Arg Asp Gln Asp Val Pro Val Lys Arg Asn Phe Ala	
1535 1540 1545	
agg att gtg gtc aat gtc agc gac acg aat gac cac gcc ccg tgg	4869
Arg Ile Val Val Asn Val Ser Asp Thr Asn Asp His Ala Pro Trp	
1550 1555 1560	
ttc acc gct tcc tcc tac aaa ggg cgg gtt tat gaa tcg gca gcc	4914
Phe Thr Ala Ser Ser Tyr Lys Gly Arg Val Tyr Glu Ser Ala Ala	
1565 1570 1575	
gtt ggc tca gtt gtg ttg cag gtg acg gct ctg gac aag gac aaa	4959
Val Gly Ser Val Val Leu Gln Val Thr Ala Leu Asp Lys Asp Lys	
1580 1585 1590	
ggg aaa aat gct gaa gtg ctg tac tcg atc gag tca gga aat att	5004
Gly Lys Asn Ala Glu Val Leu Tyr Ser Ile Glu Ser Gly Asn Ile	
1595 1600 1605	
gga aat att gga aat tct ttt atg att gat cct gtc ttg ggc tct	5049
Gly Asn Ile Gly Asn Ser Phe Met Ile Asp Pro Val Leu Gly Ser	
1610 1615 1620	
att aaa act gcc aaa gaa tta gat cga agt aac caa gcg gag tat	5094
Ile Lys Thr Ala Lys Glu Leu Asp Arg Ser Asn Gln Ala Glu Tyr	
1625 1630 1635	
gat tta atg gta aaa gct aca gat aag ggc agt cca cca atg agt	5139
Asp Leu Met Val Lys Ala Thr Asp Lys Gly Ser Pro Pro Met Ser	
1640 1645 1650	
gaa ata act tct gtg cgt atc ttt gtc aca att gct gac aac gcc	5184
Glu Ile Thr Ser Val Arg Ile Phe Val Thr Ile Ala Asp Asn Ala	
1655 1660 1665	
tct ccg aag ttt aca tca aaa gaa tat tct gtt gaa ctt agt gaa	5229
Ser Pro Lys Phe Thr Ser Lys Glu Tyr Ser Val Glu Leu Ser Glu	
1670 1675 1680	
act gtc agc att ggg agt ttc gtt ggg atg gtt aca gcc cat agt	5274
Thr Val Ser Ile Gly Ser Phe Val Gly Met Val Thr Ala His Ser	
1685 1690 1695	
caa tca tca gtg gtg tat gaa ata aaa gat gga aat aca ggt gat	5319
Gln Ser Ser Val Val Tyr Glu Ile Lys Asp Gly Asn Thr Gly Asp	
1700 1705 1710	
gct ttt gat att aat cca cat tct gga act atc atc act cag aaa	5364
Ala Phe Asp Ile Asn Pro His Ser Gly Thr Ile Ile Thr Gln Lys	
1715 1720 1725	
gcc ctg gac ttt gaa act ttg ccc att tac aca ttg ata ata caa	5409
Ala Leu Asp Phe Glu Thr Leu Pro Ile Tyr Thr Leu Ile Ile Gln	
1730 1735 1740	
gga act aac atg gct ggt ttg tcc act aat aca acg gtt cta gtt	5454
Gly Thr Asn Met Ala Gly Leu Ser Thr Asn Thr Thr Val Leu Val	
1745 1750 1755	
cac ttg cag gat gag aat gac aac gcg cca gtt ttt atg cag gca	5499
His Leu Gln Asp Glu Asn Asp Asn Ala Pro Val Phe Met Gln Ala	
1760 1765 1770	

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gaa	tat	aca	gga	ctc	att	agt	gaa	tca	gcc	tca	att	aac	agc	gtg	5544
Glu	Tyr	Thr	Gly	Leu	Ile	Ser	Glu	Ser	Ala	Ser	Ile	Asn	Ser	Val	
			1775					1780					1785		
gtc	cta	aca	gac	agg	aat	gtc	cca	ctg	gtg	att	cga	gca	gct	gat	5589
Val	Leu	Thr	Asp	Arg	Asn	Val	Pro	Leu	Val	Ile	Arg	Ala	Ala	Asp	
			1790					1795					1800		
gct	gat	aaa	gac	tca	aat	gct	ttg	ctt	gta	tat	cac	att	gtt	gaa	5634
Ala	Asp	Lys	Asp	Ser	Asn	Ala	Leu	Leu	Val	Tyr	His	Ile	Val	Glu	
			1805					1810					1815		
cca	tct	gta	cac	aca	tat	ttt	gct	att	gat	tct	agc	act	ggg	gct	5679
Pro	Ser	Val	His	Thr	Tyr	Phe	Ala	Ile	Asp	Ser	Ser	Thr	Gly	Ala	
			1820					1825					1830		
att	cat	aca	gta	cta	agt	ctg	gac	tat	gaa	gaa	aca	agt	att	ttt	5724
Ile	His	Thr	Val	Leu	Ser	Leu	Asp	Tyr	Glu	Glu	Thr	Ser	Ile	Phe	
			1835					1840					1845		
cac	ttt	acc	gtc	caa	gtg	cat	gac	atg	gga	acc	cca	cgt	tta	ttt	5769
His	Phe	Thr	Val	Gln	Val	His	Asp	Met	Gly	Thr	Pro	Arg	Leu	Phe	
			1850					1855					1860		
gct	gag	tat	gca	gcg	aat	gta	aca	gta	cat	gta	att	gac	att	aat	5814
Ala	Glu	Tyr	Ala	Ala	Asn	Val	Thr	Val	His	Val	Ile	Asp	Ile	Asn	
			1865					1870					1875		
gac	tgc	ccc	cct	gtg	ttt	gcc	aag	cca	tta	tat	gaa	gca	tct	ctt	5859
Asp	Cys	Pro	Pro	Val	Phe	Ala	Lys	Pro	Leu	Tyr	Glu	Ala	Ser	Leu	
			1880					1885					1890		
ttg	tta	cca	aca	tac	aaa	gga	gta	aaa	gtc	atc	aca	gta	aat	gct	5904
Leu	Leu	Pro	Thr	Tyr	Lys	Gly	Val	Lys	Val	Ile	Thr	Val	Asn	Ala	
			1895					1900					1905		
aca	gat	gct	gat	tca	agt	gca	ttc	tca	cag	ttg	att	tac	tcc	atc	5949
Thr	Asp	Ala	Asp	Ser	Ser	Ala	Phe	Ser	Gln	Leu	Ile	Tyr	Ser	Ile	
			1910					1915					1920		
acc	gaa	ggc	aac	atc	ggg	gag	aag	ttt	tct	atg	gac	tac	aag	act	5994
Thr	Glu	Gly	Asn	Ile	Gly	Glu	Lys	Phe	Ser	Met	Asp	Tyr	Lys	Thr	
			1925					1930					1935		
ggt	gct	ctc	act	gtc	caa	aac	aca	act	cag	tta	aga	agc	cgc	tac	6039
Gly	Ala	Leu	Thr	Val	Gln	Asn	Thr	Thr	Gln	Leu	Arg	Ser	Arg	Tyr	
			1940					1945					1950		
gag	cta	acc	gtt	aga	gct	tcc	gat	ggc	aga	ttt	gcc	ggc	ctt	acc	6084
Glu	Leu	Thr	Val	Arg	Ala	Ser	Asp	Gly	Arg	Phe	Ala	Gly	Leu	Thr	
			1955					1960					1965		
tct	gtc	aaa	att	aat	gtg	aaa	gaa	agc	aaa	gaa	agt	cac	cta	aag	6129
Ser	Val	Lys	Ile	Asn	Val	Lys	Glu	Ser	Lys	Glu	Ser	His	Leu	Lys	
			1970					1975					1980		
ttt	acc	cag	gat	gtc	tac	tct	gcg	gta	gtg	aaa	gag	aat	tcc	acc	6174
Phe	Thr	Gln	Asp	Val	Tyr	Ser	Ala	Val	Val	Lys	Glu	Asn	Ser	Thr	
			1985					1990					1995		
gag	gcc	gaa	aca	tta	gct	gtc	att	act	gct	att	ggg	agt	cca	atc	6219
Glu	Ala	Glu	Thr	Leu	Ala	Val	Ile	Thr	Ala	Ile	Gly	Ser	Pro	Ile	



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2000				2005				2010							
aat	gag	cct	ttg	ttt	tat	cac	atc	ctc	aac	cca	gat	cgc	aga	ttt	6264
Asn	Glu	Pro	Leu	Phe	Tyr	His	Ile	Leu	Asn	Pro	Asp	Arg	Arg	Phe	
			2015					2020					2025		
aaa	ata	agc	cgc	act	tca	ggg	gtt	ctg	tca	acc	act	ggc	acg	ccc	6309
Lys	Ile	Ser	Arg	Thr	Ser	Gly	Val	Leu	Ser	Thr	Thr	Gly	Thr	Pro	
			2030					2035					2040		
ttc	gat	cgt	gag	cag	cag	gag	gcg	ttt	gat	gtg	gtt	gta	gaa	gtg	6354
Phe	Asp	Arg	Glu	Gln	Gln	Glu	Ala	Phe	Asp	Val	Val	Val	Glu	Val	
			2045					2050					2055		
ata	gag	gaa	cat	aag	cct	tct	gca	gtg	gcc	cac	gtt	gtc	gtg	aag	6399
Ile	Glu	Glu	His	Lys	Pro	Ser	Ala	Val	Ala	His	Val	Val	Val	Lys	
			2060					2065					2070		
gtc	att	gta	gaa	gac	caa	aat	gat	aat	gcg	ccg	gtg	ttt	gtc	aac	6444
Val	Ile	Val	Glu	Asp	Gln	Asn	Asp	Asn	Ala	Pro	Val	Phe	Val	Asn	
			2075					2080					2085		
ctt	ccc	tac	tac	gcc	gtt	gtt	aaa	gtg	gac	act	gag	gtg	ggc	cat	6489
Leu	Pro	Tyr	Tyr	Ala	Val	Val	Lys	Val	Asp	Thr	Glu	Val	Gly	His	
			2090					2095					2100		
gtc	att	cgc	tat	gtc	act	gct	gta	gac	aga	gac	agt	ggc	aga	aac	6534
Val	Ile	Arg	Tyr	Val	Thr	Ala	Val	Asp	Arg	Asp	Ser	Gly	Arg	Asn	
			2105					2110					2115		
ggg	gaa	gtg	cat	tac	tac	ctc	aag	gaa	cat	cat	gaa	cac	ttt	caa	6579
Gly	Glu	Val	His	Tyr	Tyr	Leu	Lys	Glu	His	His	Glu	His	Phe	Gln	
			2120					2125					2130		
att	gga	ccc	ttg	ggt	gaa	att	tca	ctg	aaa	aag	caa	ttt	gag	ctt	6624
Ile	Gly	Pro	Leu	Gly	Glu	Ile	Ser	Leu	Lys	Lys	Gln	Phe	Glu	Leu	
			2135					2140					2145		
gac	acc	tta	aat	aaa	gaa	tat	ctt	gtt	aca	gtg	gtt	gca	aaa	gat	6669
Asp	Thr	Leu	Asn	Lys	Glu	Tyr	Leu	Val	Thr	Val	Val	Ala	Lys	Asp	
			2150					2155					2160		
gga	ggg	aac	ccg	gcc	ttt	tca	gcg	gaa	gtt	atc	gtt	ccg	atc	act	6714
Gly	Gly	Asn	Pro	Ala	Phe	Ser	Ala	Glu	Val	Ile	Val	Pro	Ile	Thr	
			2165					2170					2175		
gtc	atg	aat	aaa	gcc	atg	cct	gtg	ttt	gaa	aaa	cct	ttc	tac	agt	6759
Val	Met	Asn	Lys	Ala	Met	Pro	Val	Phe	Glu	Lys	Pro	Phe	Tyr	Ser	
			2180					2185					2190		
gca	gag	att	gca	gag	agc	atc	cag	gtg	cac	agc	cct	gtg	gtc	cac	6804
Ala	Glu	Ile	Ala	Glu	Ser	Ile	Gln	Val	His	Ser	Pro	Val	Val	His	
			2195					2200					2205		
gtg	cag	gct	aac	agc	ccg	gaa	ggc	ctg	aaa	gtg	ttc	tac	agc	atc	6849
Val	Gln	Ala	Asn	Ser	Pro	Glu	Gly	Leu	Lys	Val	Phe	Tyr	Ser	Ile	
			2210					2215					2220		
aca	gac	gga	gac	cct	ttc	agc	cag	ttc	act	att	aac	ttc	aat	act	6894
Thr	Asp	Gly	Asp	Pro	Phe	Ser	Gln	Phe	Thr	Ile	Asn	Phe	Asn	Thr	
			2225					2230					2235		
gga	gtt	atc	aat	gtc	ata	gct	cct	ctg	gac	ttt	gag	gcc	cac	ccg	6939

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Gly	Val	Ile	Asn	Val	Ile	Ala	Pro	Leu	Asp	Phe	Glu	Ala	His	Pro	
			2240					2245					2250		
gca	tat	aag	ctg	agc	ata	cgc	gca	act	gac	tcc	ttg	acg	ggc	gct	6984
Ala	Tyr	Lys	Leu	Ser	Ile	Arg	Ala	Thr	Asp	Ser	Leu	Thr	Gly	Ala	
			2255					2260					2265		
cat	gct	gaa	gta	ttt	gtg	gac	atc	ata	gta	gac	gac	atc	aat	gat	7029
His	Ala	Glu	Val	Phe	Val	Asp	Ile	Ile	Val	Asp	Asp	Ile	Asn	Asp	
			2270					2275					2280		
aac	cct	cct	gtg	ttt	gct	cag	cag	tct	tat	gcg	gtg	acc	ctg	tct	7074
Asn	Pro	Pro	Val	Phe	Ala	Gln	Gln	Ser	Tyr	Ala	Val	Thr	Leu	Ser	
			2285					2290					2295		
gag	gca	tct	gta	att	gga	acg	tct	gtt	gtt	caa	gtt	aga	gcc	acc	7119
Glu	Ala	Ser	Val	Ile	Gly	Thr	Ser	Val	Val	Gln	Val	Arg	Ala	Thr	
			2300					2305					2310		
gat	tct	gat	tca	gaa	cca	aat	aga	gga	atc	tca	tac	cag	atg	ttt	7164
Asp	Ser	Asp	Ser	Glu	Pro	Asn	Arg	Gly	Ile	Ser	Tyr	Gln	Met	Phe	
			2315					2320					2325		
ggg	aat	cac	agc	aag	agt	cat	gat	cat	ttt	cat	gta	gac	agc	agc	7209
Gly	Asn	His	Ser	Lys	Ser	His	Asp	His	Phe	His	Val	Asp	Ser	Ser	
			2330					2335					2340		
act	ggc	ctc	atc	tca	cta	ctc	aga	acc	ctg	gat	tac	gag	cag	tcc	7254
Thr	Gly	Leu	Ile	Ser	Leu	Leu	Arg	Thr	Leu	Asp	Tyr	Glu	Gln	Ser	
			2345					2350					2355		
cgg	cag	cac	acg	att	ttt	gtg	agg	gca	gtt	gat	ggt	ggt	atg	ccc	7299
Arg	Gln	His	Thr	Ile	Phe	Val	Arg	Ala	Val	Asp	Gly	Gly	Met	Pro	
			2360					2365					2370		
acg	ctg	agc	agt	gat	gtg	att	gtc	acg	gtg	gac	gtt	acc	gac	ctc	7344
Thr	Leu	Ser	Ser	Asp	Val	Ile	Val	Thr	Val	Asp	Val	Thr	Asp	Leu	
			2375					2380					2385		
aat	ggt	aat	cca	cca	ctc	ttt	gaa	caa	cag	att	tat	gaa	gcc	aga	7389
Asn	Gly	Asn	Pro	Pro	Leu	Phe	Glu	Gln	Gln	Ile	Tyr	Glu	Ala	Arg	
			2390					2395					2400		
att	agc	gag	cac	gcc	cct	cat	ggg	cat	ttc	gtg	acc	tgt	gta	aaa	7434
Ile	Ser	Glu	His	Ala	Pro	His	Gly	His	Phe	Val	Thr	Cys	Val	Lys	
			2405					2410					2415		
gcc	tat	gat	gca	gac	agt	tca	gac	ata	gac	aag	ttg	cag	tat	tcc	7479
Ala	Tyr	Asp	Ala	Asp	Ser	Ser	Asp	Ile	Asp	Lys	Leu	Gln	Tyr	Ser	
			2420					2425					2430		
att	ctg	tct	ggc	aat	gat	cat	aaa	cat	ttt	gtc	att	gac	agt	gca	7524
Ile	Leu	Ser	Gly	Asn	Asp	His	Lys	His	Phe	Val	Ile	Asp	Ser	Ala	
			2435					2440					2445		
aca	ggg	att	atc	acc	ctc	tca	aac	ctg	cac	cgg	cac	gcc	ctg	aag	7569
Thr	Gly	Ile	Ile	Thr	Leu	Ser	Asn	Leu	His	Arg	His	Ala	Leu	Lys	
			2450					2455					2460		
cca	ttt	tac	agt	ctt	aac	ctg	tca	gtg	tct	gat	gga	gtt	ttt	aga	7614
Pro	Phe	Tyr	Ser	Leu	Asn	Leu	Ser	Val	Ser	Asp	Gly	Val	Phe	Arg	
			2465					2470					2475		

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agt tcc acc cag gtt cat gta act gta att gga ggc aat ttg cac	7659
Ser Ser Thr Gln Val His Val Thr Val Ile Gly Gly Asn Leu His	
2480 2485 2490	
agt cct gct ttc ctt cag aac gaa tat gaa gtg gaa cta gct gaa	7704
Ser Pro Ala Phe Leu Gln Asn Glu Tyr Glu Val Glu Leu Ala Glu	
2495 2500 2505	
aac gct ccc cta cat acc ctg gtg atg gag gtg aaa act acg gat	7749
Asn Ala Pro Leu His Thr Leu Val Met Glu Val Lys Thr Thr Asp	
2510 2515 2520	
ggg gat tct ggt att tat ggt cac gtt act tac cat att gta aat	7794
Gly Asp Ser Gly Ile Tyr Gly His Val Thr Tyr His Ile Val Asn	
2525 2530 2535	
gac ttt gcc aaa gac aga ttt tac ata aat gag aga gga cag ata	7839
Asp Phe Ala Lys Asp Arg Phe Tyr Ile Asn Glu Arg Gly Gln Ile	
2540 2545 2550	
ttt act ttg gaa aaa ctt gat cga gaa acc ccg gcg gag aaa gtg	7884
Phe Thr Leu Glu Lys Leu Asp Arg Glu Thr Pro Ala Glu Lys Val	
2555 2560 2565	
atc tca gtc cgt tta atg gct aag gat gct gga gga aaa gtt gct	7929
Ile Ser Val Arg Leu Met Ala Lys Asp Ala Gly Gly Lys Val Ala	
2570 2575 2580	
ttc tgc acc gtg aat gtc atc ctt aca gat gac aat gac aat gca	7974
Phe Cys Thr Val Asn Val Ile Leu Thr Asp Asp Asn Asp Asn Ala	
2585 2590 2595	
cca caa ttt cga gca acc aaa tac gaa gtg aat atc ggg tcc agt	8019
Pro Gln Phe Arg Ala Thr Lys Tyr Glu Val Asn Ile Gly Ser Ser	
2600 2605 2610	
gct gct aaa ggg act tca gtc gta aag tct gca agt gat gcc gat	8064
Ala Ala Lys Gly Thr Ser Val Val Lys Ser Ala Ser Asp Ala Asp	
2615 2620 2625	
gag ggc tcc aat gcc gac atc acc tat gcc att gaa gca gac tct	8109
Glu Gly Ser Asn Ala Asp Ile Thr Tyr Ala Ile Glu Ala Asp Ser	
2630 2635 2640	
gaa agt gta aaa gag aat ttg gaa att aac aaa ctg tcc ggc gta	8154
Glu Ser Val Lys Glu Asn Leu Glu Ile Asn Lys Leu Ser Gly Val	
2645 2650 2655	
atc act aca aag gag agc ctc att ggc ttg gaa aat gaa ttc ttc	8199
Ile Thr Thr Lys Glu Ser Leu Ile Gly Leu Glu Asn Glu Phe Phe	
2660 2665 2670	
act ttc ttt gtt aga gct gtg gat aat ggg tct cca tca aaa gaa	8244
Thr Phe Phe Val Arg Ala Val Asp Asn Gly Ser Pro Ser Lys Glu	
2675 2680 2685	
tct gtt gtt ctt gtc tat gtt aaa atc ctt cca ccg gaa atg cag	8289
Ser Val Val Leu Val Tyr Val Lys Ile Leu Pro Pro Glu Met Gln	
2690 2695 2700	
ctt cca aaa ttt tca gaa cct ttc tat acc ttt aca gtg tca gag	8334
Leu Pro Lys Phe Ser Glu Pro Phe Tyr Thr Phe Thr Val Ser Glu	
2705 2710 2715	

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gac	gtg	cct	gtt	gga	aca	gag	ata	gat	ctc	atc	cga	gca	gaa	cat	8379
Asp	Val	Pro	Val	Gly	Thr	Glu	Ile	Asp	Leu	Ile	Arg	Ala	Glu	His	
			2720					2725					2730		
agt	ggg	act	gtt	ctt	tac	agc	ctg	gtc	aaa	ggg	aat	act	cca	gaa	8424
Ser	Gly	Thr	Val	Leu	Tyr	Ser	Leu	Val	Lys	Gly	Asn	Thr	Pro	Glu	
			2735					2740					2745		
agc	aat	agg	gat	gag	tcc	ttt	gtg	att	gac	aga	cag	agc	ggg	aga	8469
Ser	Asn	Arg	Asp	Glu	Ser	Phe	Val	Ile	Asp	Arg	Gln	Ser	Gly	Arg	
			2750					2755					2760		
ctg	aag	ttg	gag	aag	agt	ctt	gat	cat	gag	aca	act	aag	tgg	tat	8514
Leu	Lys	Leu	Glu	Lys	Ser	Leu	Asp	His	Glu	Thr	Thr	Lys	Trp	Tyr	
			2765					2770					2775		
cag	ttt	tcc	ata	ctg	gcc	agg	tgc	act	caa	gat	gac	cat	gag	atg	8559
Gln	Phe	Ser	Ile	Leu	Ala	Arg	Cys	Thr	Gln	Asp	Asp	His	Glu	Met	
			2780					2785					2790		
gtg	gct	tct	gta	gat	gtt	agt	atc	caa	gtg	aaa	gat	gca	aat	gac	8604
Val	Ala	Ser	Val	Asp	Val	Ser	Ile	Gln	Val	Lys	Asp	Ala	Asn	Asp	
			2795					2800					2805		
aac	agc	ccg	gtc	ttt	gaa	tct	agt	cca	tat	gag	gca	ttc	att	gtt	8649
Asn	Ser	Pro	Val	Phe	Glu	Ser	Ser	Pro	Tyr	Glu	Ala	Phe	Ile	Val	
			2810					2815					2820		
gaa	aac	ctg	cca	ggg	gga	agt	aga	gta	att	cag	atc	agg	gca	tct	8694
Glu	Asn	Leu	Pro	Gly	Gly	Ser	Arg	Val	Ile	Gln	Ile	Arg	Ala	Ser	
			2825					2830					2835		
gat	gct	gac	tca	gga	acc	aac	ggc	caa	gtt	atg	tat	agc	ctg	gat	8739
Asp	Ala	Asp	Ser	Gly	Thr	Asn	Gly	Gln	Val	Met	Tyr	Ser	Leu	Asp	
			2840					2845					2850		
cag	tca	caa	agt	gtg	gaa	gtc	att	gaa	tcc	ttt	gcc	att	aac	atg	8784
Gln	Ser	Gln	Ser	Val	Glu	Val	Ile	Glu	Ser	Phe	Ala	Ile	Asn	Met	
			2855					2860					2865		
gaa	aca	ggc	tgg	att	aca	act	tta	aag	gaa	ctt	gac	cat	gaa	aag	8829
Glu	Thr	Gly	Trp	Ile	Thr	Thr	Leu	Lys	Glu	Leu	Asp	His	Glu	Lys	
			2870					2875					2880		
aga	gac	aat	tac	cag	att	aaa	gtg	gtt	gca	tca	gat	cat	ggt	gaa	8874
Arg	Asp	Asn	Tyr	Gln	Ile	Lys	Val	Val	Ala	Ser	Asp	His	Gly	Glu	
			2885					2890					2895		
aag	atc	cag	cta	tcc	tcc	aca	gcc	att	gtg	gat	gtt	acc	gtc	acc	8919
Lys	Ile	Gln	Leu	Ser	Ser	Thr	Ala	Ile	Val	Asp	Val	Thr	Val	Thr	
			2900					2905					2910		
gat	gtc	aac	gat	agt	cca	cca	cga	ttc	acg	gcc	gag	atc	tat	aaa	8964
Asp	Val	Asn	Asp	Ser	Pro	Pro	Arg	Phe	Thr	Ala	Glu	Ile	Tyr	Lys	
			2915					2920					2925		
ggg	act	gtg	agt	gag	gat	gac	ccc	caa	ggt	ggg	gtg	att	gcc	atc	9009
Gly	Thr	Val	Ser	Glu	Asp	Asp	Pro	Gln	Gly	Gly	Val	Ile	Ala	Ile	
			2930					2935					2940		
tta	agt	acc	acg	gat	gct	gat	tct	gaa	gag	atc	aac	aga	caa	gtt	9054
Leu	Ser	Thr	Thr	Asp	Ala	Asp	Ser	Glu	Glu	Ile	Asn	Arg	Gln	Val	

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2945				2950				2955							
aca	tat	ttc	ata	aca	gga	ggg	gat	cct	tta	gga	cag	ttt	gcc	gtt	9099
Thr	Tyr	Phe	Ile	Thr	Gly	Gly	Asp	Pro	Leu	Gly	Gln	Phe	Ala	Val	
			2960										2970		
gaa	act	ata	cag	aat	gaa	tgg	aag	gta	tat	gtg	aag	aaa	cct	cta	9144
Glu	Thr	Ile	Gln	Asn	Glu	Trp	Lys	Val	Tyr	Val	Lys	Lys	Pro	Leu	
			2975										2985		
gac	agg	gaa	aaa	agg	gac	aat	tac	ctt	ctt	act	atc	acg	gca	act	9189
Asp	Arg	Glu	Lys	Arg	Asp	Asn	Tyr	Leu	Leu	Thr	Ile	Thr	Ala	Thr	
			2990										3000		
gat	ggc	acc	ttc	tca	tca	aaa	gcg	ata	gtt	gaa	gtg	aaa	gtt	ctg	9234
Asp	Gly	Thr	Phe	Ser	Ser	Lys	Ala	Ile	Val	Glu	Val	Lys	Val	Leu	
			3005										3015		
gat	gca	aat	gac	aac	agt	cca	gtt	tgt	gaa	aag	act	tta	tat	tca	9279
Asp	Ala	Asn	Asp	Asn	Ser	Pro	Val	Cys	Glu	Lys	Thr	Leu	Tyr	Ser	
			3020										3030		
gac	act	att	cct	gaa	gac	gtc	ctt	cct	gga	aaa	ttg	atc	atg	cag	9324
Asp	Thr	Ile	Pro	Glu	Asp	Val	Leu	Pro	Gly	Lys	Leu	Ile	Met	Gln	
			3035										3045		
atc	tct	gct	aca	gac	gca	gac	atc	cgc	tct	aac	gct	gaa	att	act	9369
Ile	Ser	Ala	Thr	Asp	Ala	Asp	Ile	Arg	Ser	Asn	Ala	Glu	Ile	Thr	
			3050										3060		
tac	acg	tta	ttg	ggt	tca	ggt	gca	gaa	aaa	ttc	aaa	cta	aat	cca	9414
Tyr	Thr	Leu	Leu	Gly	Ser	Gly	Ala	Glu	Lys	Phe	Lys	Leu	Asn	Pro	
			3065										3075		
gac	aca	ggt	gaa	ctg	aaa	acg	tca	acc	ccc	ctt	gat	cgt	gag	gag	9459
Asp	Thr	Gly	Glu	Leu	Lys	Thr	Ser	Thr	Pro	Leu	Asp	Arg	Glu	Glu	
			3080										3090		
caa	gct	gtt	tat	cat	ctt	ctc	gtc	agg	gcc	aca	gat	gga	gga	gga	9504
Gln	Ala	Val	Tyr	His	Leu	Leu	Val	Arg	Ala	Thr	Asp	Gly	Gly	Gly	
			3095										3105		
aga	ttc	tgC	caa	gcc	agt	att	gtc	gtc	acg	cta	gaa	gat	gtg	aac	9549
Arg	Phe	Cys	Gln	Ala	Ser	Ile	Val	Val	Thr	Leu	Glu	Asp	Val	Asn	
			3110										3120		
gat	aac	gcc	ccc	gaa	ttc	tct	gcc	gat	cct	tat	gcc	atc	acc	gtg	9594
Asp	Asn	Ala	Pro	Glu	Phe	Ser	Ala	Asp	Pro	Tyr	Ala	Ile	Thr	Val	
			3125										3135		
ttt	gaa	aac	aca	gag	ccg	gga	acg	ctg	ctg	aca	aga	gtg	cag	gcc	9639
Phe	Glu	Asn	Thr	Glu	Pro	Gly	Thr	Leu	Leu	Thr	Arg	Val	Gln	Ala	
			3140										3150		
aca	gat	gcc	gac	gca	gga	tta	aat	cgg	aag	att	tta	tac	tca	ctg	9684
Thr	Asp	Ala	Asp	Ala	Gly	Leu	Asn	Arg	Lys	Ile	Leu	Tyr	Ser	Leu	
			3155										3165		
att	gac	tct	gct	gat	ggg	cag	ttc	tcc	att	aac	gaa	tta	tct	gga	9729
Ile	Asp	Ser	Ala	Asp	Gly	Gln	Phe	Ser	Ile	Asn	Glu	Leu	Ser	Gly	
			3170										3180		
att	att	cag	tta	gaa	aaa	cct	ttg	gac	aga	gaa	ctc	cag	gca	gta	9774

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Ile	Ile	Gln	Leu	Glu	Lys	Pro	Leu	Asp	Arg	Glu	Leu	Gln	Ala	Val	
			3185					3190					3195		
tac	acc	ctc	tct	ttg	aaa	gct	gtg	gat	caa	ggc	ttg	cca	agg	agg	9819
Tyr	Thr	Leu	Ser	Leu	Lys	Ala	Val	Asp	Gln	Gly	Leu	Pro	Arg	Arg	
			3200					3205					3210		
ctg	act	gcc	act	ggc	act	gtg	att	gta	tca	gtt	ctt	gac	ata	aat	9864
Leu	Thr	Ala	Thr	Gly	Thr	Val	Ile	Val	Ser	Val	Leu	Asp	Ile	Asn	
			3215					3220					3225		
gac	aac	ccc	cct	gtg	ttt	gag	tac	cgt	gaa	tat	ggc	gcc	acc	gtg	9909
Asp	Asn	Pro	Pro	Val	Phe	Glu	Tyr	Arg	Glu	Tyr	Gly	Ala	Thr	Val	
			3230					3235					3240		
tct	gag	gac	att	ctt	gtt	gga	act	gaa	gtt	ctt	caa	gtg	tat	gca	9954
Ser	Glu	Asp	Ile	Leu	Val	Gly	Thr	Glu	Val	Leu	Gln	Val	Tyr	Ala	
			3245					3250					3255		
gca	agt	cgg	gat	att	gaa	gca	aat	gca	gaa	atc	acc	tac	tca	ata	9999
Ala	Ser	Arg	Asp	Ile	Glu	Ala	Asn	Ala	Glu	Ile	Thr	Tyr	Ser	Ile	
			3260					3265					3270		
ata	agt	gga	aat	gaa	cat	ggg	aaa	ttc	agc	ata	gat	tct	aaa	aca	10044
Ile	Ser	Gly	Asn	Glu	His	Gly	Lys	Phe	Ser	Ile	Asp	Ser	Lys	Thr	
			3275					3280					3285		
ggg	gcc	gta	ttt	atc	att	gag	aat	ctg	gat	tat	gag	agc	tct	cat	10089
Gly	Ala	Val	Phe	Ile	Ile	Glu	Asn	Leu	Asp	Tyr	Glu	Ser	Ser	His	
			3290					3295					3300		
gag	tat	tac	cta	aca	gta	gag	gcc	act	gat	gga	ggc	acg	cct	tca	10134
Glu	Tyr	Tyr	Leu	Thr	Val	Glu	Ala	Thr	Asp	Gly	Gly	Thr	Pro	Ser	
			3305					3310					3315		
ctg	agc	gac	gtt	gcc	act	gtg	aac	gtt	aat	gta	aca	gat	atc	aac	10179
Leu	Ser	Asp	Val	Ala	Thr	Val	Asn	Val	Asn	Val	Thr	Asp	Ile	Asn	
			3320					3325					3330		
gat	aat	acc	cct	gtg	ttc	agc	caa	gac	acc	tac	acg	aca	gtc	atc	10224
Asp	Asn	Thr	Pro	Val	Phe	Ser	Gln	Asp	Thr	Tyr	Thr	Thr	Val	Ile	
			3335					3340					3345		
agt	gaa	gat	gcc	gtt	ctt	gag	cag	tct	gtc	atc	acg	gtt	atg	gcc	10269
Ser	Glu	Asp	Ala	Val	Leu	Glu	Gln	Ser	Val	Ile	Thr	Val	Met	Ala	
			3350					3355					3360		
gat	gat	gcc	gat	gga	cct	tcc	aac	agc	cac	atc	cac	tac	tca	att	10314
Asp	Asp	Ala	Asp	Gly	Pro	Ser	Asn	Ser	His	Ile	His	Tyr	Ser	Ile	
			3365					3370					3375		
ata	gat	ggc	aac	caa	gga	agc	tcg	ttc	aca	att	gac	ccc	gtc	agg	10359
Ile	Asp	Gly	Asn	Gln	Gly	Ser	Ser	Phe	Thr	Ile	Asp	Pro	Val	Arg	
			3380					3385					3390		
gga	gaa	gtc	aaa	gtg	acc	aaa	ctt	ctc	gac	cga	gaa	acg	att	tca	10404
Gly	Glu	Val	Lys	Val	Thr	Lys	Leu	Leu	Asp	Arg	Glu	Thr	Ile	Ser	
			3395					3400					3405		
ggt	tac	acg	ctc	acg	gtt	caa	gct	tct	gat	aat	ggc	agt	cca	ccc	10449
Gly	Tyr	Thr	Leu	Thr	Val	Gln	Ala	Ser	Asp	Asn	Gly	Ser	Pro	Pro	
			3410					3415					3420		

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aga gtc aac acg acg acc gtg aac atc gat gtg tcc gat gtc aat	10494
Arg Val Asn Thr Thr Thr Val Asn Ile Asp Val Ser Asp Val Asn	
3425 3430 3435	
gac aac gcg ccc gtc ttc tcc agg gga aac tac agt gtc att atc	10539
Asp Asn Ala Pro Val Phe Ser Arg Gly Asn Tyr Ser Val Ile Ile	
3440 3445 3450	
cag gaa aat aag cca gtg ggc ttc agc gtg ctg cag ctg gta gta	10584
Gln Glu Asn Lys Pro Val Gly Phe Ser Val Leu Gln Leu Val Val	
3455 3460 3465	
aca gat gag gat tct tcc cat aac ggt cca ccc ttc ttc ttt act	10629
Thr Asp Glu Asp Ser Ser His Asn Gly Pro Pro Phe Phe Phe Thr	
3470 3475 3480	
att gta act gga aat gat gag aag gct ttt gaa gtt aac ccg caa	10674
Ile Val Thr Gly Asn Asp Glu Lys Ala Phe Glu Val Asn Pro Gln	
3485 3490 3495	
gga gtc ctc ctg aca tca tct gcc atc aag agg aag gag aaa gat	10719
Gly Val Leu Leu Thr Ser Ser Ala Ile Lys Arg Lys Glu Lys Asp	
3500 3505 3510	
cat tac tta ctg cag gtg aag gtg gca gat aat gga aag cct cag	10764
His Tyr Leu Leu Gln Val Lys Val Ala Asp Asn Gly Lys Pro Gln	
3515 3520 3525	
ttg tca tct ttg aca tac att gac att agg gta att gag gag agc	10809
Leu Ser Ser Leu Thr Tyr Ile Asp Ile Arg Val Ile Glu Glu Ser	
3530 3535 3540	
atc tat ccg cct gcg att ttg ccc ctg gag att ttc atc acc tct	10854
Ile Tyr Pro Pro Ala Ile Leu Pro Leu Glu Ile Phe Ile Thr Ser	
3545 3550 3555	
tct gga gaa gaa tac tca ggt ggc gtc att ggg aag atc cat gcc	10899
Ser Gly Glu Glu Tyr Ser Gly Gly Val Ile Gly Lys Ile His Ala	
3560 3565 3570	
aca gac cag gac gtg tat gat act cta acc tac agt ctc gac cct	10944
Thr Asp Gln Asp Val Tyr Asp Thr Leu Thr Tyr Ser Leu Asp Pro	
3575 3580 3585	
cag atg gac aac ctg ttc tct gtt tcc agc aca ggg ggc aag ctg	10989
Gln Met Asp Asn Leu Phe Ser Val Ser Ser Thr Gly Gly Lys Leu	
3590 3595 3600	
ata gca cac aaa aag cta gac ata ggg caa tac ctt ctc aat gtc	11034
Ile Ala His Lys Lys Leu Asp Ile Gly Gln Tyr Leu Leu Asn Val	
3605 3610 3615	
agc gta aca gat ggg aag ttc acg acg gtg gcc gac atc aca gtg	11079
Ser Val Thr Asp Gly Lys Phe Thr Thr Val Ala Asp Ile Thr Val	
3620 3625 3630	
cat atc aga caa gtc aca cag gag atg ttg aac cac acc atc gcg	11124
His Ile Arg Gln Val Thr Gln Glu Met Leu Asn His Thr Ile Ala	
3635 3640 3645	
atc cgc ttt gcc aac ctc act ccg gaa gaa ttc gtt ggt gac tac	11169
Ile Arg Phe Ala Asn Leu Thr Pro Glu Glu Phe Val Gly Asp Tyr	
3650 3655 3660	

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tgg	cgc	aac	ttc	cag	cga	gct	tta	cgg	aac	atc	ctg	ggt	gtg	agg	11214
Trp	Arg	Asn	Phe	Gln	Arg	Ala	Leu	Arg	Asn	Ile	Leu	Gly	Val	Arg	
			3665					3670					3675		
agg	aac	gac	ata	cag	att	ggt	agt	ttg	cag	tcc	tct	gaa	cct	cac	11259
Arg	Asn	Asp	Ile	Gln	Ile	Val	Ser	Leu	Gln	Ser	Ser	Glu	Pro	His	
			3680					3685					3690		
cca	cat	ctg	gac	gtc	tta	ctt	ttt	gta	gag	aaa	cca	ggt	agt	gct	11304
Pro	His	Leu	Asp	Val	Leu	Leu	Phe	Val	Glu	Lys	Pro	Gly	Ser	Ala	
			3695					3700					3705		
cag	atc	tca	aca	aaa	caa	ctt	ctg	cac	aag	att	aac	tct	tcc	gtg	11349
Gln	Ile	Ser	Thr	Lys	Gln	Leu	Leu	His	Lys	Ile	Asn	Ser	Ser	Val	
			3710					3715					3720		
act	gac	att	gag	gaa	atc	att	gga	gtt	agg	ata	ctg	aat	gta	ttc	11394
Thr	Asp	Ile	Glu	Glu	Ile	Ile	Gly	Val	Arg	Ile	Leu	Asn	Val	Phe	
			3725					3730					3735		
cag	aaa	ctc	tgc	gcg	gga	ctg	gac	tgc	ccc	tgg	aag	ttc	tgc	gat	11439
Gln	Lys	Leu	Cys	Ala	Gly	Leu	Asp	Cys	Pro	Trp	Lys	Phe	Cys	Asp	
			3740					3745					3750		
gaa	aag	gtg	tct	gtg	gat	gaa	agt	gtg	atg	tca	aca	cac	agc	aca	11484
Glu	Lys	Val	Ser	Val	Asp	Glu	Ser	Val	Met	Ser	Thr	His	Ser	Thr	
			3755					3760					3765		
gcc	aga	ctg	agt	ttt	gtg	act	ccc	cgc	cac	cac	agg	gca	gcg	gtg	11529
Ala	Arg	Leu	Ser	Phe	Val	Thr	Pro	Arg	His	His	Arg	Ala	Ala	Val	
			3770					3775					3780		
tgt	ctc	tgc	aaa	gag	gga	agg	tgc	cca	cct	gtc	cac	cat	ggc	tgt	11574
Cys	Leu	Cys	Lys	Glu	Gly	Arg	Cys	Pro	Pro	Val	His	His	Gly	Cys	
			3785					3790					3795		
gaa	gat	gat	ccg	tgc	cct	gag	gga	tcc	gaa	tgt	gtg	tct	gat	ccc	11619
Glu	Asp	Asp	Pro	Cys	Pro	Glu	Gly	Ser	Glu	Cys	Val	Ser	Asp	Pro	
			3800					3805					3810		
tgg	gag	gag	aaa	cac	acc	tgt	gtc	tgt	ccc	agc	ggc	agg	ttt	ggt	11664
Trp	Glu	Glu	Lys	His	Thr	Cys	Val	Cys	Pro	Ser	Gly	Arg	Phe	Gly	
			3815					3820					3825		
cag	tgc	cca	ggg	agt	tca	tct	atg	aca	ctg	act	gga	aac	agc	tac	11709
Gln	Cys	Pro	Gly	Ser	Ser	Ser	Met	Thr	Leu	Thr	Gly	Asn	Ser	Tyr	
			3830					3835					3840		
gtg	aaa	tac	cgt	ctg	acg	gaa	aat	gaa	aac	aaa	tta	gag	atg	aaa	11754
Val	Lys	Tyr	Arg	Leu	Thr	Glu	Asn	Glu	Asn	Lys	Leu	Glu	Met	Lys	
			3845					3850					3855		
ctg	acc	atg	agg	ctc	aga	aca	tat	tcc	acg	cat	gcg	gtt	gtc	atg	11799
Leu	Thr	Met	Arg	Leu	Arg	Thr	Tyr	Ser	Thr	His	Ala	Val	Val	Met	
			3860					3865					3870		
tat	gct	cga	gga	act	gac	tat	agc	atc	ttg	gag	att	cat	cat	gga	11844
Tyr	Ala	Arg	Gly	Thr	Asp	Tyr	Ser	Ile	Leu	Glu	Ile	His	His	Gly	
			3875					3880					3885		
agg	ctg	cag	tac	aag	ttt	gac	tgt	gga	agt	ggc	cct	gga	att	gtc	11889
Arg	Leu	Gln	Tyr	Lys	Phe	Asp	Cys	Gly	Ser	Gly	Pro	Gly	Ile	Val	



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3890				3895				3900							
tct	ggt	cag	agc	att	cag	gtc	aat	gat	ggg	cag	tgg	cac	gca	gtg	11934
Ser	Val	Gln	Ser	Ile	Gln	Val	Asn	Asp	Gly	Gln	Trp	His	Ala	Val	
			3905					3910					3915		
gcc	ctg	gaa	gtg	aat	gga	aac	tat	gct	cgc	ttg	gtt	cta	gac	caa	11979
Ala	Leu	Glu	Val	Asn	Gly	Asn	Tyr	Ala	Arg	Leu	Val	Leu	Asp	Gln	
			3920					3925					3930		
gtt	cat	act	gca	tcg	ggc	aca	gcc	cca	ggg	act	ctg	aaa	acc	ctg	12024
Val	His	Thr	Ala	Ser	Gly	Thr	Ala	Pro	Gly	Thr	Leu	Lys	Thr	Leu	
			3935					3940					3945		
aac	ctg	gat	aac	tat	gtg	ttt	ttt	ggt	ggc	cac	atc	cgt	cag	cag	12069
Asn	Leu	Asp	Asn	Tyr	Val	Phe	Phe	Gly	Gly	His	Ile	Arg	Gln	Gln	
			3950					3955					3960		
gga	aca	agg	cat	gga	aga	agt	cct	caa	gtt	ggg	aat	ggt	ttc	agg	12114
Gly	Thr	Arg	His	Gly	Arg	Ser	Pro	Gln	Val	Gly	Asn	Gly	Phe	Arg	
			3965					3970					3975		
ggt	tgt	atg	gac	tcc	att	tat	ttg	aat	ggg	cag	gag	ctc	cct	tta	12159
Gly	Cys	Met	Asp	Ser	Ile	Tyr	Leu	Asn	Gly	Gln	Glu	Leu	Pro	Leu	
			3980					3985					3990		
aac	agc	aaa	ccc	aga	agc	tat	gca	cac	atc	gaa	gag	tcg	gtg	gat	12204
Asn	Ser	Lys	Pro	Arg	Ser	Tyr	Ala	His	Ile	Glu	Glu	Ser	Val	Asp	
			3995					4000					4005		
gta	tct	cca	ggc	tgc	ttc	ctg	acg	gcc	acg	gaa	gac	tgc	gcc	agc	12249
Val	Ser	Pro	Gly	Cys	Phe	Leu	Thr	Ala	Thr	Glu	Asp	Cys	Ala	Ser	
			4010					4015					4020		
aac	cct	tgc	cag	aat	gga	ggc	gtt	tgc	aat	ccg	tca	cct	gct	gga	12294
Asn	Pro	Cys	Gln	Asn	Gly	Gly	Val	Cys	Asn	Pro	Ser	Pro	Ala	Gly	
			4025					4030					4035		
ggt	tat	tac	tgc	aaa	tgc	agt	gcc	ttg	tac	ata	ggg	acc	cac	tgt	12339
Gly	Tyr	Tyr	Cys	Lys	Cys	Ser	Ala	Leu	Tyr	Ile	Gly	Thr	His	Cys	
			4040					4045					4050		
gag	ata	agc	gtc	aat	ccg	tgt	tcc	tcc	aac	cca	tgc	ctc	tat	ggg	12384
Glu	Ile	Ser	Val	Asn	Pro	Cys	Ser	Ser	Asn	Pro	Cys	Leu	Tyr	Gly	
			4055					4060					4065		
ggc	acg	tgt	gtt	gtc	gac	aac	gga	ggc	ttt	gtt	tgc	cag	tgt	aga	12429
Gly	Thr	Cys	Val	Val	Asp	Asn	Gly	Gly	Phe	Val	Cys	Gln	Cys	Arg	
			4070					4075					4080		
gga	tta	tat	act	ggt	cag	agg	tgt	cag	ctt	agt	cca	tac	tgc	aaa	12474
Gly	Leu	Tyr	Thr	Gly	Gln	Arg	Cys	Gln	Leu	Ser	Pro	Tyr	Cys	Lys	
			4085					4090					4095		
gat	gaa	ccc	tgt	aag	aat	ggc	gga	aca	tgc	ttt	gac	agt	ttg	gat	12519
Asp	Glu	Pro	Cys	Lys	Asn	Gly	Gly	Thr	Cys	Phe	Asp	Ser	Leu	Asp	
			4100					4105					4110		
ggc	gcc	gtt	tgt	cag	tgt	gat	tcg	ggt	ttt	agg	gga	gaa	agg	tgt	12564
Gly	Ala	Val	Cys	Gln	Cys	Asp	Ser	Gly	Phe	Arg	Gly	Glu	Arg	Cys	
			4115					4120					4125		
cag	agt	gat	atc	gac	gag	tgc	tct	gga	aac	cct	tgc	ctg	cac	ggg	12609

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Gln	Ser	Asp	Ile	Asp	Glu	Cys	Ser	Gly	Asn	Pro	Cys	Leu	His	Gly	
			4130					4135					4140		
gcc	ctc	tgt	gag	aac	acg	cac	ggc	tcc	tat	cac	tgc	aac	tgc	agc	12654
Ala	Leu	Cys	Glu	Asn	Thr	His	Gly	Ser	Tyr	His	Cys	Asn	Cys	Ser	
			4145					4150					4155		
cac	gag	tac	agg	gga	cgt	cac	tgc	gag	gat	gct	gcg	ccc	aac	cag	12699
His	Glu	Tyr	Arg	Gly	Arg	His	Cys	Glu	Asp	Ala	Ala	Pro	Asn	Gln	
			4160					4165					4170		
tat	gtg	tcc	acg	ccg	tgg	aac	att	ggg	ttg	gcg	gaa	gga	att	gga	12744
Tyr	Val	Ser	Thr	Pro	Trp	Asn	Ile	Gly	Leu	Ala	Glu	Gly	Ile	Gly	
			4175					4180					4185		
atc	gtt	gtg	ttt	gtt	gca	ggg	ata	ttt	tta	ctg	gtg	gtg	gtg	ttt	12789
Ile	Val	Val	Phe	Val	Ala	Gly	Ile	Phe	Leu	Leu	Val	Val	Val	Phe	
			4190					4195					4200		
gtt	ctc	tgc	cgt	aag	atg	att	agt	cgg	aaa	aag	aag	cat	cag	gct	12834
Val	Leu	Cys	Arg	Lys	Met	Ile	Ser	Arg	Lys	Lys	Lys	His	Gln	Ala	
			4205					4210					4215		
gaa	cct	aaa	gac	aag	cac	ctg	gga	ccc	gct	acg	gct	ttc	ttg	caa	12879
Glu	Pro	Lys	Asp	Lys	His	Leu	Gly	Pro	Ala	Thr	Ala	Phe	Leu	Gln	
			4220					4225					4230		
aga	ccg	tat	ttt	gat	tcc	aag	cta	aat	aag	aac	att	tac	tca	gac	12924
Arg	Pro	Tyr	Phe	Asp	Ser	Lys	Leu	Asn	Lys	Asn	Ile	Tyr	Ser	Asp	
			4235					4240					4245		
ata	cca	ccc	cag	gtg	cct	gtc	cgg	cct	att	tcc	tac	acc	ccg	agt	12969
Ile	Pro	Pro	Gln	Val	Pro	Val	Arg	Pro	Ile	Ser	Tyr	Thr	Pro	Ser	
			4250					4255					4260		
att	cca	agt	gac	tca	aga	aac	aat	ctg	gac	cga	aat	tcc	ttc	gaa	13014
Ile	Pro	Ser	Asp	Ser	Arg	Asn	Asn	Leu	Asp	Arg	Asn	Ser	Phe	Glu	
			4265					4270					4275		
gga	tct	gct	atc	cca	gag	cat	ccc	gaa	ttc	agc	act	ttt	aac	ccc	13059
Gly	Ser	Ala	Ile	Pro	Glu	His	Pro	Glu	Phe	Ser	Thr	Phe	Asn	Pro	
			4280					4285					4290		
gag	tct	gtg	cac	ggg	cac	cga	aaa	gca	gtg	gcg	gtc	tgc	agc	gtg	13104
Glu	Ser	Val	His	Gly	His	Arg	Lys	Ala	Val	Ala	Val	Cys	Ser	Val	
			4295					4300					4305		
gcg	cca	aac	ctg	cct	ccc	cca	ccc	cct	tca	aac	tcc	cct	tct	gac	13149
Ala	Pro	Asn	Leu	Pro	Pro	Pro	Pro	Pro	Ser	Asn	Ser	Pro	Ser	Asp	
			4310					4315					4320		
agc	gac	tcc	atc	cag	aag	cct	agc	tgg	gac	ttt	gac	tat	gac	aca	13194
Ser	Asp	Ser	Ile	Gln	Lys	Pro	Ser	Trp	Asp	Phe	Asp	Tyr	Asp	Thr	
			4325					4330					4335		
aaa	gtg	gtg	gat	ctt	gat	ccc	tgt	ctt	tcc	aag	aag	cct	cta	gag	13239
Lys	Val	Val	Asp	Leu	Asp	Pro	Cys	Leu	Ser	Lys	Lys	Pro	Leu	Glu	
			4340					4345					4350		
gaa	aag	cct	tcc	cag	cca	tac	agt	gcc	cgg	gaa	agc	ctg	tct	gaa	13284
Glu	Lys	Pro	Ser	Gln	Pro	Tyr	Ser	Ala	Arg	Glu	Ser	Leu	Ser	Glu	
			4355					4360					4365		

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gtg	cag	tcc	ctg	agc	tcc	ttc	cag	tcc	gaa	tcg	tgc	gat	gac	aat	13329
Val	Gln	Ser	Leu	Ser	Ser	Phe	Gln	Ser	Glu	Ser	Cys	Asp	Asp	Asn	
			4370					4375					4380		
ggg	tat	cac	tgg	gat	aca	tca	gat	tgg	atg	cca	agc	gtt	cct	ctg	13374
Gly	Tyr	His	Trp	Asp	Thr	Ser	Asp	Trp	Met	Pro	Ser	Val	Pro	Leu	
			4385					4390					4395		
ccg	gac	ata	caa	gag	ttc	ccc	aac	tat	gag	gtg	att	gat	gag	cag	13419
Pro	Asp	Ile	Gln	Glu	Phe	Pro	Asn	Tyr	Glu	Val	Ile	Asp	Glu	Gln	
			4400					4405					4410		
aca	ccc	ctg	tac	tca	gca	gat	cca	aac	gcc	atc	gat	acg	gac	tat	13464
Thr	Pro	Leu	Tyr	Ser	Ala	Asp	Pro	Asn	Ala	Ile	Asp	Thr	Asp	Tyr	
			4415					4420					4425		
tac	cct	gga	ggc	tac	gac	atc	gaa	agt	gat	ttt	cct	cca	ccc	cca	13509
Tyr	Pro	Gly	Gly	Tyr	Asp	Ile	Glu	Ser	Asp	Phe	Pro	Pro	Pro	Pro	
			4430					4435					4440		
gaa	gac	ttc	ccc	gca	gct	gat	gag	cta	cca	ccg	tta	ccg	ccc	gaa	13554
Glu	Asp	Phe	Pro	Ala	Ala	Asp	Glu	Leu	Pro	Pro	Leu	Pro	Pro	Glu	
			4445					4450					4455		
ttc	agc	aat	cag	ttt	gaa	tcc	atc	cac	cct	cct	aga	gac	atg	cct	13599
Phe	Ser	Asn	Gln	Phe	Glu	Ser	Ile	His	Pro	Pro	Arg	Asp	Met	Pro	
			4460					4465					4470		
gcc	gcg	ggt	agc	ttg	ggt	tct	tca	tca	aga	aac	cgg	cag	agg	ttc	13644
Ala	Ala	Gly	Ser	Leu	Gly	Ser	Ser	Ser	Arg	Asn	Arg	Gln	Arg	Phe	
			4475					4480					4485		
aac	ttg	aat	cag	tat	ttg	ccc	aat	ttt	tat	ccc	ctc	gat	atg	tct	13689
Asn	Leu	Asn	Gln	Tyr	Leu	Pro	Asn	Phe	Tyr	Pro	Leu	Asp	Met	Ser	
			4490					4495					4500		
gaa	cct	caa	aca	aaa	ggc	act	ggt	gag	aat	agt	act	tgt	aga	gaa	13734
Glu	Pro	Gln	Thr	Lys	Gly	Thr	Gly	Glu	Asn	Ser	Thr	Cys	Arg	Glu	
			4505					4510					4515		
ccc	cat	gcc	cct	tac	ccg	cca	ggg	tat	caa	aga	cac	ttc	gag	gcg	13779
Pro	His	Ala	Pro	Tyr	Pro	Pro	Gly	Tyr	Gln	Arg	His	Phe	Glu	Ala	
			4520					4525					4530		
ccc	gct	gtc	gag	agc	atg	ccc	atg	tct	gtg	tac	gcc	tcc	acc	gcc	13824
Pro	Ala	Val	Glu	Ser	Met	Pro	Met	Ser	Val	Tyr	Ala	Ser	Thr	Ala	
			4535					4540					4545		
tcc	tgc	tct	gac	gtg	tca	gcc	tgc	tgc	gaa	gtg	gag	tcc	gag	gtc	13869
Ser	Cys	Ser	Asp	Val	Ser	Ala	Cys	Cys	Glu	Val	Glu	Ser	Glu	Val	
			4550					4555					4560		
atg	atg	agt	gac	tat	gag	agc	ggg	gac	gac	ggc	cac	ttc	gaa	gag	13914
Met	Met	Ser	Asp	Tyr	Glu	Ser	Gly	Asp	Asp	Gly	His	Phe	Glu	Glu	
			4565					4570					4575		
gtg	acg	atc	ccg	ccc	ctg	gat	tcc	cag	cag	cac	acg	gaa	gtc	tga	13959
Val	Thr	Ile	Pro	Pro	Leu	Asp	Ser	Gln	Gln	His	Thr	Glu	Val		
			4580					4585					4590		
ctctcaactc	cccccaaagt	gcctgacttt	agtgaacctc	gaggtgatgt	gagtaatccg										14019
cgctgttctt	tcgagcagtg	cttccaagct	ttttttggtg	agccgaatgg	gcatggctgc										14079

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gctggatcct gcgcctctgg acgtgctagc catttccagt gtcccaacta ctgtcatcgt 14139
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acctgtttag aaccaaaacc accatgacac agtttttata gtgtctgtat atttgtgatg 14679
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taaattatta ataaaat 14756

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<210> 3
<211> 4590
<212> PRT
<213> Homo sapiens

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<400> 3

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Met Gly Arg His Leu Ala Leu Leu Leu Leu Leu Leu Leu Phe Gln
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```

```

His Phe Gly Asp Ser Asp Gly Ser Gln Arg Leu Glu Gln Thr Pro Leu
20          25          30

```

```

Gln Phe Thr His Leu Glu Tyr Asn Val Thr Val Gln Glu Asn Ser Ala
35          40          45

```

```

Ala Lys Thr Tyr Val Gly His Pro Val Lys Met Gly Val Tyr Ile Thr
50          55          60

```

```

His Pro Ala Trp Glu Val Arg Tyr Lys Ile Val Ser Gly Asp Ser Glu
65          70          75          80

```

```

Asn Leu Phe Lys Ala Glu Glu Tyr Ile Leu Gly Asp Phe Cys Phe Leu
85          90          95

```

```

Arg Ile Arg Thr Lys Gly Gly Asn Thr Ala Ile Leu Asn Arg Glu Val
100         105         110

```

```

Lys Asp His Tyr Thr Leu Ile Val Lys Ala Leu Glu Lys Asn Thr Asn
115         120         125

```

FBRIC54.003APC\_Sequence Listing.txt

Val Glu Ala Arg Thr Lys Val Arg Val Gln Val Leu Asp Thr Asn Asp  
130 135 140

Leu Arg Pro Leu Phe Ser Pro Thr Ser Tyr Ser Val Ser Leu Pro Glu  
145 150 155 160

Asn Thr Ala Ile Arg Thr Ser Ile Ala Arg Val Ser Ala Thr Asp Ala  
165 170 175

Asp Ile Gly Thr Asn Gly Glu Phe Tyr Tyr Ser Phe Lys Asp Arg Thr  
180 185 190

Asp Met Phe Ala Ile His Pro Thr Ser Gly Val Ile Val Leu Thr Gly  
195 200 205

Arg Leu Asp Tyr Leu Glu Thr Lys Leu Tyr Glu Met Glu Ile Leu Ala  
210 215 220

Ala Asp Arg Gly Met Lys Leu Tyr Gly Ser Ser Gly Ile Ser Ser Met  
225 230 235 240

Ala Lys Leu Thr Val His Ile Glu Gln Ala Asn Glu Cys Ala Pro Val  
245 250 255

Ile Thr Ala Val Thr Leu Ser Pro Ser Glu Leu Asp Arg Asp Pro Ala  
260 265 270

Tyr Ala Ile Val Thr Val Asp Asp Cys Asp Gln Gly Ala Asn Gly Asp  
275 280 285

Ile Ala Ser Leu Ser Ile Val Ala Gly Asp Leu Leu Gln Gln Phe Arg  
290 295 300

Thr Val Arg Ser Phe Pro Gly Ser Lys Glu Tyr Lys Val Lys Ala Ile  
305 310 315 320

Gly Asp Ile Asp Trp Asp Ser His Pro Phe Gly Tyr Asn Leu Thr Leu  
325 330 335

Gln Ala Lys Asp Lys Gly Thr Pro Pro Gln Phe Ser Ser Val Lys Val  
340 345 350

Ile His Val Thr Ser Pro Gln Phe Lys Ala Gly Pro Val Lys Phe Glu  
355 360 365

Lys Asp Val Tyr Arg Ala Glu Ile Ser Glu Phe Ala Pro Pro Asn Thr



FBRIC54.003APC\_Sequence Listing.txt

Ser Leu Lys Arg Ser Leu Met Asp Gly Leu Gly Ala Lys Val Ser Phe  
625 630 635 640

His Ser Leu Arg Ile Thr Ala Thr Asp Gly Glu Asn Phe Ala Thr Pro  
645 650 655

Leu Tyr Ile Asn Ile Thr Val Ala Ala Ser His Lys Leu Val Asn Leu  
660 665 670

Gln Cys Glu Glu Thr Gly Val Ala Lys Met Leu Ala Glu Lys Leu Leu  
675 680 685

Gln Ala Asn Lys Leu His Asn Gln Gly Glu Val Glu Asp Ile Phe Phe  
690 695 700

Asp Ser His Ser Val Asn Ala His Ile Pro Gln Phe Arg Ser Thr Leu  
705 710 715 720

Pro Thr Gly Ile Gln Val Lys Glu Asn Gln Pro Val Gly Ser Ser Val  
725 730 735

Ile Phe Met Asn Ser Thr Asp Leu Asp Thr Gly Phe Asn Gly Lys Leu  
740 745 750

Val Tyr Ala Val Ser Gly Gly Asn Glu Asp Ser Cys Phe Met Ile Asp  
755 760 765

Met Glu Thr Gly Met Leu Lys Ile Leu Ser Pro Leu Asp Arg Glu Thr  
770 775 780

Thr Asp Lys Tyr Thr Leu Asn Ile Thr Val Tyr Asp Leu Gly Ile Pro  
785 790 795 800

Gln Lys Ala Ala Trp Arg Leu Leu His Val Val Val Val Asp Ala Asn  
805 810 815

Asp Asn Pro Pro Glu Phe Leu Gln Glu Ser Tyr Phe Val Glu Val Ser  
820 825 830

Glu Asp Lys Glu Val His Ser Glu Ile Ile Gln Val Glu Ala Thr Asp  
835 840 845

Lys Asp Leu Gly Pro Asn Gly His Val Thr Tyr Ser Ile Leu Thr Asp  
850 855 860

Thr Asp Thr Phe Ser Ile Asp Ser Val Thr Gly Val Val Asn Ile Ala  
865 870 875 880

FBRIC54.003APC\_Sequence Listing.txt

Arg Pro Leu Asp Arg Glu Leu Gln His Glu His Ser Leu Lys Ile Glu  
885 890 895

Ala Arg Asp Gln Ala Arg Glu Glu Pro Gln Leu Phe Ser Thr Val Val  
900 905 910

Val Lys Val Ser Leu Glu Asp Val Asn Asp Asn Pro Pro Thr Phe Ile  
915 920 925

Pro Pro Asn Tyr Arg Val Lys Val Arg Glu Asp Leu Pro Glu Gly Thr  
930 935 940

Val Ile Met Trp Leu Glu Ala His Asp Pro Asp Leu Gly Gln Ser Gly  
945 950 955 960

Gln Val Arg Tyr Ser Leu Leu Asp His Gly Glu Gly Asn Phe Asp Val  
965 970 975

Asp Lys Leu Ser Gly Ala Val Arg Ile Val Gln Gln Leu Asp Phe Glu  
980 985 990

Lys Lys Gln Val Tyr Asn Leu Thr Val Arg Ala Lys Asp Lys Gly Lys  
995 1000 1005

Pro Val Ser Leu Ser Ser Thr Cys Tyr Val Glu Val Glu Val Val  
1010 1015 1020

Asp Val Asn Glu Asn Leu His Pro Pro Val Phe Ser Ser Phe Val  
1025 1030 1035

Glu Lys Gly Thr Val Lys Glu Asp Ala Pro Val Gly Ser Leu Val  
1040 1045 1050

Met Thr Val Ser Ala His Asp Glu Asp Ala Gly Arg Asp Gly Glu  
1055 1060 1065

Ile Arg Tyr Ser Ile Arg Asp Gly Ser Gly Val Gly Val Phe Lys  
1070 1075 1080

Ile Gly Glu Glu Thr Gly Val Ile Glu Thr Ser Asp Arg Leu Asp  
1085 1090 1095

Arg Glu Ser Thr Ser His Tyr Trp Leu Thr Val Phe Ala Thr Asp  
1100 1105 1110

Gln Gly Val Val Pro Leu Ser Ser Phe Ile Glu Ile Tyr Ile Glu  
1115 1120 1125



FBRIC54.003APC\_Sequence Listing.txt

Val	Glu	Asp	Val	Asn	Asp	Asn	Ala	Pro	Gln	Thr	Ser	Glu	Pro	Val
	1130					1135					1140			
Tyr	Tyr	Pro	Glu	Ile	Met	Glu	Asn	Ser	Pro	Lys	Asp	Val	Ser	Val
	1145					1150					1155			
Val	Gln	Ile	Glu	Ala	Phe	Asp	Pro	Asp	Ser	Ser	Ser	Asn	Asp	Lys
	1160					1165					1170			
Leu	Met	Tyr	Lys	Ile	Thr	Ser	Gly	Asn	Pro	Gln	Gly	Phe	Phe	Ser
	1175					1180					1185			
Ile	His	Pro	Lys	Thr	Gly	Leu	Ile	Thr	Thr	Thr	Ser	Arg	Lys	Leu
	1190					1195					1200			
Asp	Arg	Glu	Gln	Gln	Asp	Glu	His	Ile	Leu	Glu	Val	Thr	Val	Thr
	1205					1210					1215			
Asp	Asn	Gly	Ser	Pro	Pro	Lys	Ser	Thr	Ile	Ala	Arg	Val	Ile	Val
	1220					1225					1230			
Lys	Ile	Leu	Asp	Glu	Asn	Asp	Asn	Lys	Pro	Gln	Phe	Leu	Gln	Lys
	1235					1240					1245			
Phe	Tyr	Lys	Ile	Arg	Leu	Pro	Glu	Arg	Glu	Lys	Pro	Asp	Arg	Glu
	1250					1255					1260			
Arg	Asn	Ala	Arg	Arg	Glu	Pro	Leu	Tyr	Arg	Val	Ile	Ala	Thr	Asp
	1265					1270					1275			
Lys	Asp	Glu	Gly	Pro	Asn	Ala	Glu	Ile	Ser	Tyr	Ser	Ile	Glu	Asp
	1280					1285					1290			
Gly	Asn	Glu	His	Gly	Lys	Phe	Phe	Ile	Glu	Pro	Lys	Thr	Gly	Val
	1295					1300					1305			
Val	Ser	Ser	Lys	Arg	Phe	Ser	Ala	Ala	Gly	Glu	Tyr	Asp	Ile	Leu
	1310					1315					1320			
Ser	Ile	Lys	Ala	Val	Asp	Asn	Gly	Arg	Pro	Gln	Lys	Ser	Ser	Thr
	1325					1330					1335			
Thr	Arg	Leu	His	Ile	Glu	Trp	Ile	Ser	Lys	Pro	Lys	Gln	Ser	Leu
	1340					1345					1350			
Glu	Pro	Ile	Ser	Phe	Glu	Glu	Ser	Phe	Phe	Thr	Phe	Thr	Val	Met

FBRIC54.003APC\_Sequence Listing.txt

1355						1360					1365
Glu	Ser	Asp	Pro	Val	Ala	His	Met	Ile	Gly	Val	Ile
1370						1375					1380
Pro	Pro	Gly	Ile	Pro	Leu	Trp	Phe	Asp	Ile	Thr	Gly
1385						1390					1395
Asp	Ser	His	Phe	Asp	Val	Asp	Lys	Gly	Thr	Gly	Thr
1400						1405					1410
Ala	Lys	Pro	Leu	Asp	Ala	Glu	Gln	Lys	Ser	Asn	Tyr
1415						1420					1425
Val	Glu	Ala	Thr	Asp	Gly	Thr	Thr	Thr	Ile	Leu	Thr
1430						1435					1440
Ile	Lys	Val	Ile	Asp	Thr	Asn	Asp	His	Arg	Pro	Gln
1445						1450					1455
Ser	Lys	Tyr	Glu	Val	Val	Ile	Pro	Glu	Asp	Thr	Ala
1460						1465					1470
Glu	Ile	Leu	Gln	Ile	Ser	Ala	Val	Asp	Gln	Asp	Glu
1475						1480					1485
Leu	Ile	Tyr	Thr	Leu	Gln	Ser	Ser	Arg	Asp	Pro	Leu
1490						1495					1500
Lys	Phe	Arg	Leu	Asp	Pro	Ala	Thr	Gly	Ser	Leu	Tyr
1505						1510					1515
Lys	Leu	Asp	His	Glu	Ala	Val	Ser	Pro	Ala	His	Leu
1520						1525					1530
Val	Arg	Asp	Gln	Asp	Val	Pro	Val	Lys	Arg	Asn	Phe
1535						1540					1545
Val	Val	Asn	Val	Ser	Asp	Thr	Asn	Asp	His	Ala	Pro
1550						1555					1560
Ala	Ser	Ser	Tyr	Lys	Gly	Arg	Val	Tyr	Glu	Ser	Ala
1565						1570					1575
Ser	Val	Val	Leu	Gln	Val	Thr	Ala	Leu	Asp	Lys	Asp
1580						1585					1590

FBRIC54.003APC\_Sequence Listing.txt

Asn	Ala	Glu	Val	Leu	Tyr	Ser	Ile	Glu	Ser	Gly	Asn	Ile	Gly	Asn
1595						1600					1605			
Ile	Gly	Asn	Ser	Phe	Met	Ile	Asp	Pro	Val	Leu	Gly	Ser	Ile	Lys
1610						1615					1620			
Thr	Ala	Lys	Glu	Leu	Asp	Arg	Ser	Asn	Gln	Ala	Glu	Tyr	Asp	Leu
1625						1630					1635			
Met	Val	Lys	Ala	Thr	Asp	Lys	Gly	Ser	Pro	Pro	Met	Ser	Glu	Ile
1640						1645					1650			
Thr	Ser	Val	Arg	Ile	Phe	Val	Thr	Ile	Ala	Asp	Asn	Ala	Ser	Pro
1655						1660					1665			
Lys	Phe	Thr	Ser	Lys	Glu	Tyr	Ser	Val	Glu	Leu	Ser	Glu	Thr	Val
1670						1675					1680			
Ser	Ile	Gly	Ser	Phe	Val	Gly	Met	Val	Thr	Ala	His	Ser	Gln	Ser
1685						1690					1695			
Ser	Val	Val	Tyr	Glu	Ile	Lys	Asp	Gly	Asn	Thr	Gly	Asp	Ala	Phe
1700						1705					1710			
Asp	Ile	Asn	Pro	His	Ser	Gly	Thr	Ile	Ile	Thr	Gln	Lys	Ala	Leu
1715						1720					1725			
Asp	Phe	Glu	Thr	Leu	Pro	Ile	Tyr	Thr	Leu	Ile	Ile	Gln	Gly	Thr
1730						1735					1740			
Asn	Met	Ala	Gly	Leu	Ser	Thr	Asn	Thr	Thr	Val	Leu	Val	His	Leu
1745						1750					1755			
Gln	Asp	Glu	Asn	Asp	Asn	Ala	Pro	Val	Phe	Met	Gln	Ala	Glu	Tyr
1760						1765					1770			
Thr	Gly	Leu	Ile	Ser	Glu	Ser	Ala	Ser	Ile	Asn	Ser	Val	Val	Leu
1775						1780					1785			
Thr	Asp	Arg	Asn	Val	Pro	Leu	Val	Ile	Arg	Ala	Ala	Asp	Ala	Asp
1790						1795					1800			
Lys	Asp	Ser	Asn	Ala	Leu	Leu	Val	Tyr	His	Ile	Val	Glu	Pro	Ser
1805						1810					1815			
Val	His	Thr	Tyr	Phe	Ala	Ile	Asp	Ser	Ser	Thr	Gly	Ala	Ile	His
1820						1825					1830			

FBRIC54.003APC\_Sequence Listing.txt

Thr Val 1835	Leu Ser Leu Asp	Tyr 1840	Glu Glu Thr Ser	Ile 1845	Phe His Phe
Thr Val 1850	Gln Val His Asp	Met 1855	Gly Thr Pro Arg	Leu 1860	Phe Ala Glu
Tyr Ala 1865	Ala Asn Val Thr	Val 1870	His Val Ile Asp	Ile 1875	Asn Asp Cys
Pro Pro 1880	Val Phe Ala Lys	Pro 1885	Leu Tyr Glu Ala	Ser 1890	Leu Leu Leu
Pro Thr 1895	Tyr Lys Gly Val	Lys 1900	Val Ile Thr Val	Asn 1905	Ala Thr Asp
Ala Asp 1910	Ser Ser Ala Phe	Ser 1915	Gln Leu Ile Tyr	Ser 1920	Ile Thr Glu
Gly Asn 1925	Ile Gly Glu Lys	Phe 1930	Ser Met Asp Tyr	Lys 1935	Thr Gly Ala
Leu Thr 1940	Val Gln Asn Thr	Thr 1945	Gln Leu Arg Ser	Arg 1950	Tyr Glu Leu
Thr Val 1955	Arg Ala Ser Asp	Gly 1960	Arg Phe Ala Gly	Leu 1965	Thr Ser Val
Lys Ile 1970	Asn Val Lys Glu	Ser 1975	Lys Glu Ser His	Leu 1980	Lys Phe Thr
Gln Asp 1985	Val Tyr Ser Ala	Val 1990	Val Lys Glu Asn	Ser 1995	Thr Glu Ala
Glu Thr 2000	Leu Ala Val Ile	Thr 2005	Ala Ile Gly Ser	Pro 2010	Ile Asn Glu
Pro Leu 2015	Phe Tyr His Ile	Leu 2020	Asn Pro Asp Arg	Arg 2025	Phe Lys Ile
Ser Arg 2030	Thr Ser Gly Val	Leu 2035	Ser Thr Thr Gly	Thr 2040	Pro Phe Asp
Arg Glu 2045	Gln Gln Glu Ala	Phe 2050	Asp Val Val Val	Glu 2055	Val Ile Glu
Glu His 2060	Lys Pro Ser Ala	Val 2065	Ala His Val Val	Val 2070	Lys Val Ile

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Val	Glu	Asp	Gln	Asn	Asp	Asn	Ala	Pro	Val	Phe	Val	Asn	Leu	Pro
	2075					2080					2085			
Tyr	Tyr	Ala	Val	Val	Lys	Val	Asp	Thr	Glu	Val	Gly	His	Val	Ile
	2090					2095					2100			
Arg	Tyr	Val	Thr	Ala	Val	Asp	Arg	Asp	Ser	Gly	Arg	Asn	Gly	Glu
	2105					2110					2115			
Val	His	Tyr	Tyr	Leu	Lys	Glu	His	His	Glu	His	Phe	Gln	Ile	Gly
	2120					2125					2130			
Pro	Leu	Gly	Glu	Ile	Ser	Leu	Lys	Lys	Gln	Phe	Glu	Leu	Asp	Thr
	2135					2140					2145			
Leu	Asn	Lys	Glu	Tyr	Leu	Val	Thr	Val	Val	Ala	Lys	Asp	Gly	Gly
	2150					2155					2160			
Asn	Pro	Ala	Phe	Ser	Ala	Glu	Val	Ile	Val	Pro	Ile	Thr	Val	Met
	2165					2170					2175			
Asn	Lys	Ala	Met	Pro	Val	Phe	Glu	Lys	Pro	Phe	Tyr	Ser	Ala	Glu
	2180					2185					2190			
Ile	Ala	Glu	Ser	Ile	Gln	Val	His	Ser	Pro	Val	Val	His	Val	Gln
	2195					2200					2205			
Ala	Asn	Ser	Pro	Glu	Gly	Leu	Lys	Val	Phe	Tyr	Ser	Ile	Thr	Asp
	2210					2215					2220			
Gly	Asp	Pro	Phe	Ser	Gln	Phe	Thr	Ile	Asn	Phe	Asn	Thr	Gly	Val
	2225					2230					2235			
Ile	Asn	Val	Ile	Ala	Pro	Leu	Asp	Phe	Glu	Ala	His	Pro	Ala	Tyr
	2240					2245					2250			
Lys	Leu	Ser	Ile	Arg	Ala	Thr	Asp	Ser	Leu	Thr	Gly	Ala	His	Ala
	2255					2260					2265			
Glu	Val	Phe	Val	Asp	Ile	Ile	Val	Asp	Asp	Ile	Asn	Asp	Asn	Pro
	2270					2275					2280			
Pro	Val	Phe	Ala	Gln	Gln	Ser	Tyr	Ala	Val	Thr	Leu	Ser	Glu	Ala
	2285					2290					2295			
Ser	Val	Ile	Gly	Thr	Ser	Val	Val	Gln	Val	Arg	Ala	Thr	Asp	Ser

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2300						2305					2310				
Asp	Ser	Glu	Pro	Asn	Arg	Gly	Ile	Ser	Tyr	Gln	Met	Phe	Gly	Asn	
2315						2320					2325				
His	Ser	Lys	Ser	His	Asp	His	Phe	His	Val	Asp	Ser	Ser	Thr	Gly	
2330						2335					2340				
Leu	Ile	Ser	Leu	Leu	Arg	Thr	Leu	Asp	Tyr	Glu	Gln	Ser	Arg	Gln	
2345						2350					2355				
His	Thr	Ile	Phe	Val	Arg	Ala	Val	Asp	Gly	Gly	Met	Pro	Thr	Leu	
2360						2365					2370				
Ser	Ser	Asp	Val	Ile	Val	Thr	Val	Asp	Val	Thr	Asp	Leu	Asn	Gly	
2375						2380					2385				
Asn	Pro	Pro	Leu	Phe	Glu	Gln	Gln	Ile	Tyr	Glu	Ala	Arg	Ile	Ser	
2390						2395					2400				
Glu	His	Ala	Pro	His	Gly	His	Phe	Val	Thr	Cys	Val	Lys	Ala	Tyr	
2405						2410					2415				
Asp	Ala	Asp	Ser	Ser	Asp	Ile	Asp	Lys	Leu	Gln	Tyr	Ser	Ile	Leu	
2420						2425					2430				
Ser	Gly	Asn	Asp	His	Lys	His	Phe	Val	Ile	Asp	Ser	Ala	Thr	Gly	
2435						2440					2445				
Ile	Ile	Thr	Leu	Ser	Asn	Leu	His	Arg	His	Ala	Leu	Lys	Pro	Phe	
2450						2455					2460				
Tyr	Ser	Leu	Asn	Leu	Ser	Val	Ser	Asp	Gly	Val	Phe	Arg	Ser	Ser	
2465						2470					2475				
Thr	Gln	Val	His	Val	Thr	Val	Ile	Gly	Gly	Asn	Leu	His	Ser	Pro	
2480						2485					2490				
Ala	Phe	Leu	Gln	Asn	Glu	Tyr	Glu	Val	Glu	Leu	Ala	Glu	Asn	Ala	
2495						2500					2505				
Pro	Leu	His	Thr	Leu	Val	Met	Glu	Val	Lys	Thr	Thr	Asp	Gly	Asp	
2510						2515					2520				
Ser	Gly	Ile	Tyr	Gly	His	Val	Thr	Tyr	His	Ile	Val	Asn	Asp	Phe	
2525						2530					2535				

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Ala	Lys	Asp	Arg	Phe	Tyr	Ile	Asn	Glu	Arg	Gly	Gln	Ile	Phe	Thr
	2540					2545					2550			
Leu	Glu	Lys	Leu	Asp	Arg	Glu	Thr	Pro	Ala	Glu	Lys	Val	Ile	Ser
	2555					2560					2565			
Val	Arg	Leu	Met	Ala	Lys	Asp	Ala	Gly	Gly	Lys	Val	Ala	Phe	Cys
	2570					2575					2580			
Thr	Val	Asn	Val	Ile	Leu	Thr	Asp	Asp	Asn	Asp	Asn	Ala	Pro	Gln
	2585					2590					2595			
Phe	Arg	Ala	Thr	Lys	Tyr	Glu	Val	Asn	Ile	Gly	Ser	Ser	Ala	Ala
	2600					2605					2610			
Lys	Gly	Thr	Ser	Val	Val	Lys	Ser	Ala	Ser	Asp	Ala	Asp	Glu	Gly
	2615					2620					2625			
Ser	Asn	Ala	Asp	Ile	Thr	Tyr	Ala	Ile	Glu	Ala	Asp	Ser	Glu	Ser
	2630					2635					2640			
Val	Lys	Glu	Asn	Leu	Glu	Ile	Asn	Lys	Leu	Ser	Gly	Val	Ile	Thr
	2645					2650					2655			
Thr	Lys	Glu	Ser	Leu	Ile	Gly	Leu	Glu	Asn	Glu	Phe	Phe	Thr	Phe
	2660					2665					2670			
Phe	Val	Arg	Ala	Val	Asp	Asn	Gly	Ser	Pro	Ser	Lys	Glu	Ser	Val
	2675					2680					2685			
Val	Leu	Val	Tyr	Val	Lys	Ile	Leu	Pro	Pro	Glu	Met	Gln	Leu	Pro
	2690					2695					2700			
Lys	Phe	Ser	Glu	Pro	Phe	Tyr	Thr	Phe	Thr	Val	Ser	Glu	Asp	Val
	2705					2710					2715			
Pro	Val	Gly	Thr	Glu	Ile	Asp	Leu	Ile	Arg	Ala	Glu	His	Ser	Gly
	2720					2725					2730			
Thr	Val	Leu	Tyr	Ser	Leu	Val	Lys	Gly	Asn	Thr	Pro	Glu	Ser	Asn
	2735					2740					2745			
Arg	Asp	Glu	Ser	Phe	Val	Ile	Asp	Arg	Gln	Ser	Gly	Arg	Leu	Lys
	2750					2755					2760			
Leu	Glu	Lys	Ser	Leu	Asp	His	Glu	Thr	Thr	Lys	Trp	Tyr	Gln	Phe
	2765					2770					2775			

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Ser	Ile	Leu	Ala	Arg	Cys	Thr	Gln	Asp	Asp	His	Glu	Met	Val	Ala
	2780					2785					2790			
Ser	Val	Asp	Val	Ser	Ile	Gln	Val	Lys	Asp	Ala	Asn	Asp	Asn	Ser
	2795					2800					2805			
Pro	Val	Phe	Glu	Ser	Ser	Pro	Tyr	Glu	Ala	Phe	Ile	Val	Glu	Asn
	2810					2815					2820			
Leu	Pro	Gly	Gly	Ser	Arg	Val	Ile	Gln	Ile	Arg	Ala	Ser	Asp	Ala
	2825					2830					2835			
Asp	Ser	Gly	Thr	Asn	Gly	Gln	Val	Met	Tyr	Ser	Leu	Asp	Gln	Ser
	2840					2845					2850			
Gln	Ser	Val	Glu	Val	Ile	Glu	Ser	Phe	Ala	Ile	Asn	Met	Glu	Thr
	2855					2860					2865			
Gly	Trp	Ile	Thr	Thr	Leu	Lys	Glu	Leu	Asp	His	Glu	Lys	Arg	Asp
	2870					2875					2880			
Asn	Tyr	Gln	Ile	Lys	Val	Val	Ala	Ser	Asp	His	Gly	Glu	Lys	Ile
	2885					2890					2895			
Gln	Leu	Ser	Ser	Thr	Ala	Ile	Val	Asp	Val	Thr	Val	Thr	Asp	Val
	2900					2905					2910			
Asn	Asp	Ser	Pro	Pro	Arg	Phe	Thr	Ala	Glu	Ile	Tyr	Lys	Gly	Thr
	2915					2920					2925			
Val	Ser	Glu	Asp	Asp	Pro	Gln	Gly	Gly	Val	Ile	Ala	Ile	Leu	Ser
	2930					2935					2940			
Thr	Thr	Asp	Ala	Asp	Ser	Glu	Glu	Ile	Asn	Arg	Gln	Val	Thr	Tyr
	2945					2950					2955			
Phe	Ile	Thr	Gly	Gly	Asp	Pro	Leu	Gly	Gln	Phe	Ala	Val	Glu	Thr
	2960					2965					2970			
Ile	Gln	Asn	Glu	Trp	Lys	Val	Tyr	Val	Lys	Lys	Pro	Leu	Asp	Arg
	2975					2980					2985			
Glu	Lys	Arg	Asp	Asn	Tyr	Leu	Leu	Thr	Ile	Thr	Ala	Thr	Asp	Gly
	2990					2995					3000			
Thr	Phe	Ser	Ser	Lys	Ala	Ile	Val	Glu	Val	Lys	Val	Leu	Asp	Ala
	3005					3010					3015			



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Asn	Asp	Asn	Ser	Pro	Val	Cys	Glu	Lys	Thr	Leu	Tyr	Ser	Asp	Thr
	3020					3025					3030			
Ile	Pro	Glu	Asp	Val	Leu	Pro	Gly	Lys	Leu	Ile	Met	Gln	Ile	Ser
	3035					3040					3045			
Ala	Thr	Asp	Ala	Asp	Ile	Arg	Ser	Asn	Ala	Glu	Ile	Thr	Tyr	Thr
	3050					3055					3060			
Leu	Leu	Gly	Ser	Gly	Ala	Glu	Lys	Phe	Lys	Leu	Asn	Pro	Asp	Thr
	3065					3070					3075			
Gly	Glu	Leu	Lys	Thr	Ser	Thr	Pro	Leu	Asp	Arg	Glu	Glu	Gln	Ala
	3080					3085					3090			
Val	Tyr	His	Leu	Leu	Val	Arg	Ala	Thr	Asp	Gly	Gly	Gly	Arg	Phe
	3095					3100					3105			
Cys	Gln	Ala	Ser	Ile	Val	Val	Thr	Leu	Glu	Asp	Val	Asn	Asp	Asn
	3110					3115					3120			
Ala	Pro	Glu	Phe	Ser	Ala	Asp	Pro	Tyr	Ala	Ile	Thr	Val	Phe	Glu
	3125					3130					3135			
Asn	Thr	Glu	Pro	Gly	Thr	Leu	Leu	Thr	Arg	Val	Gln	Ala	Thr	Asp
	3140					3145					3150			
Ala	Asp	Ala	Gly	Leu	Asn	Arg	Lys	Ile	Leu	Tyr	Ser	Leu	Ile	Asp
	3155					3160					3165			
Ser	Ala	Asp	Gly	Gln	Phe	Ser	Ile	Asn	Glu	Leu	Ser	Gly	Ile	Ile
	3170					3175					3180			
Gln	Leu	Glu	Lys	Pro	Leu	Asp	Arg	Glu	Leu	Gln	Ala	Val	Tyr	Thr
	3185					3190					3195			
Leu	Ser	Leu	Lys	Ala	Val	Asp	Gln	Gly	Leu	Pro	Arg	Arg	Leu	Thr
	3200					3205					3210			
Ala	Thr	Gly	Thr	Val	Ile	Val	Ser	Val	Leu	Asp	Ile	Asn	Asp	Asn
	3215					3220					3225			
Pro	Pro	Val	Phe	Glu	Tyr	Arg	Glu	Tyr	Gly	Ala	Thr	Val	Ser	Glu
	3230					3235					3240			
Asp	Ile	Leu	Val	Gly	Thr	Glu	Val	Leu	Gln	Val	Tyr	Ala	Ala	Ser

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3245						3250					3255			
Arg	Asp	Ile	Glu	Ala	Asn	Ala	Glu	Ile	Thr	Tyr	Ser	Ile	Ile	Ser
	3260					3265					3270			
Gly	Asn	Glu	His	Gly	Lys	Phe	Ser	Ile	Asp	Ser	Lys	Thr	Gly	Ala
	3275					3280					3285			
Val	Phe	Ile	Ile	Glu	Asn	Leu	Asp	Tyr	Glu	Ser	Ser	His	Glu	Tyr
	3290					3295					3300			
Tyr	Leu	Thr	Val	Glu	Ala	Thr	Asp	Gly	Gly	Thr	Pro	Ser	Leu	Ser
	3305					3310					3315			
Asp	Val	Ala	Thr	Val	Asn	Val	Asn	Val	Thr	Asp	Ile	Asn	Asp	Asn
	3320					3325					3330			
Thr	Pro	Val	Phe	Ser	Gln	Asp	Thr	Tyr	Thr	Thr	Val	Ile	Ser	Glu
	3335					3340					3345			
Asp	Ala	Val	Leu	Glu	Gln	Ser	Val	Ile	Thr	Val	Met	Ala	Asp	Asp
	3350					3355					3360			
Ala	Asp	Gly	Pro	Ser	Asn	Ser	His	Ile	His	Tyr	Ser	Ile	Ile	Asp
	3365					3370					3375			
Gly	Asn	Gln	Gly	Ser	Ser	Phe	Thr	Ile	Asp	Pro	Val	Arg	Gly	Glu
	3380					3385					3390			
Val	Lys	Val	Thr	Lys	Leu	Leu	Asp	Arg	Glu	Thr	Ile	Ser	Gly	Tyr
	3395					3400					3405			
Thr	Leu	Thr	Val	Gln	Ala	Ser	Asp	Asn	Gly	Ser	Pro	Pro	Arg	Val
	3410					3415					3420			
Asn	Thr	Thr	Thr	Val	Asn	Ile	Asp	Val	Ser	Asp	Val	Asn	Asp	Asn
	3425					3430					3435			
Ala	Pro	Val	Phe	Ser	Arg	Gly	Asn	Tyr	Ser	Val	Ile	Ile	Gln	Glu
	3440					3445					3450			
Asn	Lys	Pro	Val	Gly	Phe	Ser	Val	Leu	Gln	Leu	Val	Val	Thr	Asp
	3455					3460					3465			
Glu	Asp	Ser	Ser	His	Asn	Gly	Pro	Pro	Phe	Phe	Phe	Thr	Ile	Val
	3470					3475					3480			

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Thr	Gly	Asn	Asp	Glu	Lys	Ala	Phe	Glu	Val	Asn	Pro	Gln	Gly	Val
	3485					3490					3495			
Leu	Leu	Thr	Ser	Ser	Ala	Ile	Lys	Arg	Lys	Glu	Lys	Asp	His	Tyr
	3500					3505					3510			
Leu	Leu	Gln	Val	Lys	Val	Ala	Asp	Asn	Gly	Lys	Pro	Gln	Leu	Ser
	3515					3520					3525			
Ser	Leu	Thr	Tyr	Ile	Asp	Ile	Arg	Val	Ile	Glu	Glu	Ser	Ile	Tyr
	3530					3535					3540			
Pro	Pro	Ala	Ile	Leu	Pro	Leu	Glu	Ile	Phe	Ile	Thr	Ser	Ser	Gly
	3545					3550					3555			
Glu	Glu	Tyr	Ser	Gly	Gly	Val	Ile	Gly	Lys	Ile	His	Ala	Thr	Asp
	3560					3565					3570			
Gln	Asp	Val	Tyr	Asp	Thr	Leu	Thr	Tyr	Ser	Leu	Asp	Pro	Gln	Met
	3575					3580					3585			
Asp	Asn	Leu	Phe	Ser	Val	Ser	Ser	Thr	Gly	Gly	Lys	Leu	Ile	Ala
	3590					3595					3600			
His	Lys	Lys	Leu	Asp	Ile	Gly	Gln	Tyr	Leu	Leu	Asn	Val	Ser	Val
	3605					3610					3615			
Thr	Asp	Gly	Lys	Phe	Thr	Thr	Val	Ala	Asp	Ile	Thr	Val	His	Ile
	3620					3625					3630			
Arg	Gln	Val	Thr	Gln	Glu	Met	Leu	Asn	His	Thr	Ile	Ala	Ile	Arg
	3635					3640					3645			
Phe	Ala	Asn	Leu	Thr	Pro	Glu	Glu	Phe	Val	Gly	Asp	Tyr	Trp	Arg
	3650					3655					3660			
Asn	Phe	Gln	Arg	Ala	Leu	Arg	Asn	Ile	Leu	Gly	Val	Arg	Arg	Asn
	3665					3670					3675			
Asp	Ile	Gln	Ile	Val	Ser	Leu	Gln	Ser	Ser	Glu	Pro	His	Pro	His
	3680					3685					3690			
Leu	Asp	Val	Leu	Leu	Phe	Val	Glu	Lys	Pro	Gly	Ser	Ala	Gln	Ile
	3695					3700					3705			
Ser	Thr	Lys	Gln	Leu	Leu	His	Lys	Ile	Asn	Ser	Ser	Val	Thr	Asp
	3710					3715					3720			

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Ile	Glu	Glu	Ile	Ile	Gly	Val	Arg	Ile	Leu	Asn	Val	Phe	Gln	Lys
	3725					3730					3735			
Leu	Cys	Ala	Gly	Leu	Asp	Cys	Pro	Trp	Lys	Phe	Cys	Asp	Glu	Lys
	3740					3745					3750			
Val	Ser	Val	Asp	Glu	Ser	Val	Met	Ser	Thr	His	Ser	Thr	Ala	Arg
	3755					3760					3765			
Leu	Ser	Phe	Val	Thr	Pro	Arg	His	His	Arg	Ala	Ala	Val	Cys	Leu
	3770					3775					3780			
Cys	Lys	Glu	Gly	Arg	Cys	Pro	Pro	Val	His	His	Gly	Cys	Glu	Asp
	3785					3790					3795			
Asp	Pro	Cys	Pro	Glu	Gly	Ser	Glu	Cys	Val	Ser	Asp	Pro	Trp	Glu
	3800					3805					3810			
Glu	Lys	His	Thr	Cys	Val	Cys	Pro	Ser	Gly	Arg	Phe	Gly	Gln	Cys
	3815					3820					3825			
Pro	Gly	Ser	Ser	Ser	Met	Thr	Leu	Thr	Gly	Asn	Ser	Tyr	Val	Lys
	3830					3835					3840			
Tyr	Arg	Leu	Thr	Glu	Asn	Glu	Asn	Lys	Leu	Glu	Met	Lys	Leu	Thr
	3845					3850					3855			
Met	Arg	Leu	Arg	Thr	Tyr	Ser	Thr	His	Ala	Val	Val	Met	Tyr	Ala
	3860					3865					3870			
Arg	Gly	Thr	Asp	Tyr	Ser	Ile	Leu	Glu	Ile	His	His	Gly	Arg	Leu
	3875					3880					3885			
Gln	Tyr	Lys	Phe	Asp	Cys	Gly	Ser	Gly	Pro	Gly	Ile	Val	Ser	Val
	3890					3895					3900			
Gln	Ser	Ile	Gln	Val	Asn	Asp	Gly	Gln	Trp	His	Ala	Val	Ala	Leu
	3905					3910					3915			
Glu	Val	Asn	Gly	Asn	Tyr	Ala	Arg	Leu	Val	Leu	Asp	Gln	Val	His
	3920					3925					3930			
Thr	Ala	Ser	Gly	Thr	Ala	Pro	Gly	Thr	Leu	Lys	Thr	Leu	Asn	Leu
	3935					3940					3945			
Asp	Asn	Tyr	Val	Phe	Phe	Gly	Gly	His	Ile	Arg	Gln	Gln	Gly	Thr
	3950					3955					3960			

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Arg	His 3965	Gly	Arg	Ser	Pro	Gln 3970	Val	Gly	Asn	Gly	Phe 3975	Arg	Gly	Cys
Met	Asp 3980	Ser	Ile	Tyr	Leu	Asn 3985	Gly	Gln	Glu	Leu	Pro 3990	Leu	Asn	Ser
Lys	Pro 3995	Arg	Ser	Tyr	Ala	His 4000	Ile	Glu	Glu	Ser	Val 4005	Asp	Val	Ser
Pro	Gly 4010	Cys	Phe	Leu	Thr	Ala 4015	Thr	Glu	Asp	Cys	Ala 4020	Ser	Asn	Pro
Cys	Gln 4025	Asn	Gly	Gly	Val	Cys 4030	Asn	Pro	Ser	Pro	Ala 4035	Gly	Gly	Tyr
Tyr	Cys 4040	Lys	Cys	Ser	Ala	Leu 4045	Tyr	Ile	Gly	Thr	His 4050	Cys	Glu	Ile
Ser	Val 4055	Asn	Pro	Cys	Ser	Ser 4060	Asn	Pro	Cys	Leu	Tyr 4065	Gly	Gly	Thr
Cys	Val 4070	Val	Asp	Asn	Gly	Gly 4075	Phe	Val	Cys	Gln	Cys 4080	Arg	Gly	Leu
Tyr	Thr 4085	Gly	Gln	Arg	Cys	Gln 4090	Leu	Ser	Pro	Tyr	Cys 4095	Lys	Asp	Glu
Pro	Cys 4100	Lys	Asn	Gly	Gly	Thr 4105	Cys	Phe	Asp	Ser	Leu 4110	Asp	Gly	Ala
Val	Cys 4115	Gln	Cys	Asp	Ser	Gly 4120	Phe	Arg	Gly	Glu	Arg 4125	Cys	Gln	Ser
Asp	Ile 4130	Asp	Glu	Cys	Ser	Gly 4135	Asn	Pro	Cys	Leu	His 4140	Gly	Ala	Leu
Cys	Glu 4145	Asn	Thr	His	Gly	Ser 4150	Tyr	His	Cys	Asn	Cys 4155	Ser	His	Glu
Tyr	Arg 4160	Gly	Arg	His	Cys	Glu 4165	Asp	Ala	Ala	Pro	Asn 4170	Gln	Tyr	Val
Ser	Thr 4175	Pro	Trp	Asn	Ile	Gly 4180	Leu	Ala	Glu	Gly	Ile 4185	Gly	Ile	Val
Val	Phe	Val	Ala	Gly	Ile	Phe	Leu	Leu	Val	Val	Val	Phe	Val	Leu

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4190					4195					4200
Cys	Arg	Lys	Met	Ile	Ser	Arg	Lys	Lys	Lys	His
4205						4210				Gln
										Ala
										Glu
										Pro
Lys	Asp	Lys	His	Leu	Gly	Pro	Ala	Thr	Ala	Phe
4220						4225				Leu
										Gln
										Arg
										Pro
Tyr	Phe	Asp	Ser	Lys	Leu	Asn	Lys	Asn	Ile	Tyr
4235						4240				Ser
										Asp
										Ile
										Pro
Pro	Gln	Val	Pro	Val	Arg	Pro	Ile	Ser	Tyr	Thr
4250						4255				Pro
										Ser
										Ile
										Pro
Ser	Asp	Ser	Arg	Asn	Asn	Leu	Asp	Arg	Asn	Ser
4265						4270				Phe
										Glu
										Gly
										Ser
Ala	Ile	Pro	Glu	His	Pro	Glu	Phe	Ser	Thr	Phe
4280						4285				Asn
										Pro
										Glu
										Ser
Val	His	Gly	His	Arg	Lys	Ala	Val	Ala	Val	Cys
4295						4300				Ser
										Val
										Ala
										Pro
Asn	Leu	Pro	Pro	Pro	Pro	Pro	Ser	Asn	Ser	Pro
4310						4315				Ser
										Asp
										Ser
										Asp
Ser	Ile	Gln	Lys	Pro	Ser	Trp	Asp	Phe	Asp	Tyr
4325						4330				Asp
										Thr
										Lys
										Val
Val	Asp	Leu	Asp	Pro	Cys	Leu	Ser	Lys	Lys	Pro
4340						4345				Leu
										Glu
										Glu
										Lys
Pro	Ser	Gln	Pro	Tyr	Ser	Ala	Arg	Glu	Ser	Leu
4355						4360				Ser
										Glu
										Val
										Gln
Ser	Leu	Ser	Ser	Phe	Gln	Ser	Glu	Ser	Cys	Asp
4370						4375				Asp
										Asn
										Gly
										Tyr
His	Trp	Asp	Thr	Ser	Asp	Trp	Met	Pro	Ser	Val
4385						4390				Pro
										Leu
										Pro
										Asp
Ile	Gln	Glu	Phe	Pro	Asn	Tyr	Glu	Val	Ile	Asp
4400						4405				Glu
										Gln
										Thr
										Pro
Leu	Tyr	Ser	Ala	Asp	Pro	Asn	Ala	Ile	Asp	Thr
4415						4420				Asp
										Tyr
										Tyr
										Pro

FBRIC54.003APC\_Sequence Listing.txt

Gly Gly Tyr Asp Ile Glu Ser Asp Phe Pro Pro Pro Pro Glu Asp  
4430 4435 4440

Phe Pro Ala Ala Asp Glu Leu Pro Pro Leu Pro Pro Glu Phe Ser  
4445 4450 4455

Asn Gln Phe Glu Ser Ile His Pro Pro Arg Asp Met Pro Ala Ala  
4460 4465 4470

Gly Ser Leu Gly Ser Ser Ser Arg Asn Arg Gln Arg Phe Asn Leu  
4475 4480 4485

Asn Gln Tyr Leu Pro Asn Phe Tyr Pro Leu Asp Met Ser Glu Pro  
4490 4495 4500

Gln Thr Lys Gly Thr Gly Glu Asn Ser Thr Cys Arg Glu Pro His  
4505 4510 4515

Ala Pro Tyr Pro Pro Gly Tyr Gln Arg His Phe Glu Ala Pro Ala  
4520 4525 4530

Val Glu Ser Met Pro Met Ser Val Tyr Ala Ser Thr Ala Ser Cys  
4535 4540 4545

Ser Asp Val Ser Ala Cys Cys Glu Val Glu Ser Glu Val Met Met  
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Ser Asp Tyr Glu Ser Gly Asp Asp Gly His Phe Glu Glu Val Thr  
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Ile Pro Pro Leu Asp Ser Gln Gln His Thr Glu Val  
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<212> DNA  
<213> Homo sapiens

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acgcgcgagc ccggcgaggc cccggcaggc ccgtccctgc tcgggggagc gctgagacgg 120  
cgggtgagct ccacgagagc gccgtcgcca ctctgggcca actttgcgat tcccgcacgt 180  
taagca atg ggg aga cat ttg gct ttg ctc ctg ctt ctg ctc ctt ctc 228  
Met Gly Arg His Leu Ala Leu Leu Leu Leu Leu Leu Leu

## FBRIC54.003APC\_Sequence Listing.txt

1	5	10	
ttc caa cat ttt gga gac agt gat ggc agc caa cga ctt gaa cag act	Phe Gln His Phe Gly Asp Ser Asp Gly Ser Gln Arg Leu Glu Gln Thr	276	
15	20	25	30
cct ctg cag ttt aca cac ctc gag tac aac gtc acc gtg cag gag aac	Pro Leu Gln Phe Thr His Leu Glu Tyr Asn Val Thr Val Gln Glu Asn	324	
35	40	45	
tct gca gct aag act tat gtg ggg cat cct gtc aag atg ggt gtt tac	Ser Ala Ala Lys Thr Tyr Val Gly His Pro Val Lys Met Gly Val Tyr	372	
50	55	60	
att aca cat cca gcg tgg gaa gta agg tac aaa att gtt tcc gga gac	Ile Thr His Pro Ala Trp Glu Val Arg Tyr Lys Ile Val Ser Gly Asp	420	
65	70	75	
agt gaa aac ctg ttc aaa gct gaa gag tac att ctc gga gac ttt tgc	Ser Glu Asn Leu Phe Lys Ala Glu Glu Tyr Ile Leu Gly Asp Phe Cys	468	
80	85	90	
ttt cta aga ata agg acc aaa gga gga aat aca gct att ctt aat aga	Phe Leu Arg Ile Arg Thr Lys Gly Gly Asn Thr Ala Ile Leu Asn Arg	516	
95	100	105	110
gaa gtg aag gat cac tac aca ttg ata gtg aaa gca ctt gaa aaa aat	Glu Val Lys Asp His Tyr Thr Leu Ile Val Lys Ala Leu Glu Lys Asn	564	
115	120	125	
act aat gtg gag gcg cga aca aag gtc agg gtg cag gtg ctg gat aca	Thr Asn Val Glu Ala Arg Thr Lys Val Arg Val Gln Val Leu Asp Thr	612	
130	135	140	
aat gac ttg aga ccg tta ttc tca ccc acc tca tac agc gtt tct tta	Asn Asp Leu Arg Pro Leu Phe Ser Pro Thr Ser Tyr Ser Val Ser Leu	660	
145	150	155	
cct gaa aac aca gct ata agg acc agt atc gca aga gtc agc gcc acg	Pro Glu Asn Thr Ala Ile Arg Thr Ser Ile Ala Arg Val Ser Ala Thr	708	
160	165	170	
gat gca gac ata gga acc aac ggg gaa ttt tac tac agt ttt aaa gat	Asp Ala Asp Ile Gly Thr Asn Gly Glu Phe Tyr Tyr Ser Phe Lys Asp	756	
175	180	185	190
cga aca gat atg ttt gct att cac cca acc agt ggt gtg ata gtg tta	Arg Thr Asp Met Phe Ala Ile His Pro Thr Ser Gly Val Ile Val Leu	804	
195	200	205	
act ggt aga ctt gat tac cta gag acc aag ctc tat gag atg gaa atc	Thr Gly Arg Leu Asp Tyr Leu Glu Thr Lys Leu Tyr Glu Met Glu Ile	852	
210	215	220	
ctc gct gcg gac cgt ggc atg aag ttg tat ggg agc agt ggc atc agc	Leu Ala Ala Asp Arg Gly Met Lys Leu Tyr Gly Ser Ser Gly Ile Ser	900	
225	230	235	
agc atg gcc aag cta acg gtg cac atc gaa cag gcc aat gaa tgt gct	Ser Met Ala Lys Leu Thr Val His Ile Glu Gln Ala Asn Glu Cys Ala	948	
240	245	250	
ccg gtg ata aca gca gtg aca ttg tca cca tca gaa ctg gac agg gac		996	



FBRIC54.003APC\_Sequence Listing.txt

Pro 255	Val	Ile	Thr	Ala	Val 260	Thr	Leu	Ser	Pro	Ser 265	Glu	Leu	Asp	Arg	Asp 270	
cca	gca	tat	gca	att	gtg	aca	gtg	gat	gac	tgc	gat	cag	ggt	gcc	aat	1044
Pro	Ala	Tyr	Ala	Ile 275	Val	Thr	Val	Asp	Asp 280	Cys	Asp	Gln	Gly	Ala 285	Asn	
ggt	gac	ata	gca	tct	tta	agc	atc	gtg	gca	ggt	gac	ctt	ctc	cag	cag	1092
Gly	Asp	Ile	Ala 290	Ser	Leu	Ser	Ile	Val 295	Ala	Gly	Asp	Leu	Leu 300	Gln	Gln	
ttt	aga	aca	gtg	agg	tcc	ttt	cca	ggg	agt	aag	gag	tat	aaa	gtc	aaa	1140
Phe	Arg	Thr 305	Val	Arg	Ser	Phe	Pro 310	Gly	Ser	Lys	Glu	Tyr 315	Lys	Val	Lys	
gcc	atc	ggt	gac	att	gat	tgg	gac	agt	cat	cct	ttc	ggc	tac	aat	ctc	1188
Ala	Ile 320	Gly	Asp	Ile	Asp	Trp 325	Asp	Ser	His	Pro	Phe 330	Gly	Tyr	Asn	Leu	
aca	cta	cag	gct	aaa	gat	aaa	gga	act	ccg	ccc	cag	ttc	tct	tct	gtt	1236
Thr 335	Leu	Gln	Ala	Lys	Asp 340	Lys	Gly	Thr	Pro	Pro 345	Gln	Phe	Ser	Ser	Val 350	
aaa	gtc	att	cac	gtg	act	tct	cca	cag	ttc	aaa	gcc	ggg	cca	gtc	aag	1284
Lys	Val	Ile	His 355	Val	Thr	Ser	Pro	Gln	Phe 360	Lys	Ala	Gly	Pro	Val 365	Lys	
ttt	gaa	aag	gat	gtt	tac	aga	gca	gaa	ata	agt	gaa	ttt	gct	cct	ccc	1332
Phe	Glu	Lys	Asp 370	Val	Tyr	Arg	Ala	Glu 375	Ile	Ser	Glu	Phe	Ala 380	Pro	Pro	
aac	aca	cct	gtg	gtc	atg	gta	aag	gcc	att	cct	gct	tat	tcc	cat	ttg	1380
Asn	Thr	Pro 385	Val	Val	Met	Val	Lys 390	Ala	Ile	Pro	Ala	Tyr 395	Ser	His	Leu	
agg	tat	gtt	ttt	aaa	agg	aca	cct	gga	aaa	gct	aaa	ttc	agt	tta	aat	1428
Arg	Tyr 400	Val	Phe	Lys	Arg	Thr 405	Pro	Gly	Lys	Ala	Lys 410	Phe	Ser	Leu	Asn	
tac	aac	act	ggt	ctc	att	tct	att	tta	gaa	cca	gtt	aaa	aga	cag	cag	1476
Tyr 415	Asn	Thr	Gly	Leu	Ile 420	Ser	Ile	Leu	Glu	Pro 425	Val	Lys	Arg	Gln	Gln 430	
gca	gcc	cat	ttt	gaa	ctt	gaa	gta	aca	aca	agt	gac	aga	aaa	gcg	tcc	1524
Ala	Ala	His	Phe 435	Glu	Leu	Glu	Val	Thr	Thr 440	Ser	Asp	Arg	Lys	Ala 445	Ser	
acc	aag	gtc	ttg	gtg	aaa	gtc	tta	ggt	gca	aat	agc	aat	ccc	cct	gaa	1572
Thr	Lys	Val 450	Leu	Val	Lys	Val	Leu	Gly 455	Ala	Asn	Ser	Asn	Pro 460	Pro	Glu	
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Phe	Thr	Gln 465	Thr	Ala	Tyr	Lys	Ala 470	Ala	Phe	Asp	Glu	Asn 475	Val	Pro	Ile	
ggt	act	act	atc	atg	agc	ctg	agt	gcc	gta	gac	cct	gat	gag	ggt	gag	1668
Gly	Thr 480	Thr	Ile	Met	Ser	Leu 485	Ser	Ala	Val	Asp	Pro 490	Asp	Glu	Gly	Glu	
aat	ggg	tac	gtg	aca	tac	agt	atc	gca	aat	tta	aat	cat	gtg	ccg	ttt	1716
Asn 495	Gly	Tyr	Val	Thr	Tyr 500	Ser	Ile	Ala	Asn	Leu 505	Asn	His	Val	Pro	Phe 510	

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gcg att gac cat ttc act ggt gcc gtg agt acg tca gaa aac ctg gac Ala Ile Asp His Phe Thr Gly Ala Val Ser Thr Ser Glu Asn Leu Asp 515 520 525	1764
tac gaa ctg atg cct cgg gtt tat act ctg agg att cgt gca tca gac Tyr Glu Leu Met Pro Arg Val Tyr Thr Leu Arg Ile Arg Ala Ser Asp 530 535 540	1812
tgg ggc ttg ccg tac cgc cgg gaa gtc gaa gtc ctt gct aca att act Trp Gly Leu Pro Tyr Arg Arg Glu Val Glu Val Leu Ala Thr Ile Thr 545 550 555	1860
ctc aat aac ttg aat gac aac aca cct ttg ttt gag aaa ata aat tgt Leu Asn Asn Leu Asn Asp Asn Thr Pro Leu Phe Glu Lys Ile Asn Cys 560 565 570	1908
gaa ggg aca att ccc aga gat cta ggc gtg gga gag caa ata acc act Glu Gly Thr Ile Pro Arg Asp Leu Gly Val Gly Glu Gln Ile Thr Thr 575 580 585 590	1956
gtt tct gct att gat gca gat gaa ctt cag ttg gta cag tat cag att Val Ser Ala Ile Asp Ala Asp Glu Leu Gln Leu Val Gln Tyr Gln Ile 595 600 605	2004
gaa gct gga aat gaa ctg gat ttg ttt agt tta aac ccc aac tcg ggg Glu Ala Gly Asn Glu Leu Asp Leu Phe Ser Leu Asn Pro Asn Ser Gly 610 615 620	2052
gta ttg tca tta aag cga tcg cta atg gat ggc tta ggt gca aag gtg Val Leu Ser Leu Lys Arg Ser Leu Met Asp Gly Leu Gly Ala Lys Val 625 630 635	2100
tct ttc cac agt ctg aga atc aca gct aca gat gga gaa aat ttt gcc Ser Phe His Ser Leu Arg Ile Thr Ala Thr Asp Gly Glu Asn Phe Ala 640 645 650	2148
aca cca tta tat atc aac ata aca gtg gct gcc agt cac aag ctg gta Thr Pro Leu Tyr Ile Asn Ile Thr Val Ala Ala Ser His Lys Leu Val 655 660 665 670	2196
aac ttg cag tgt gaa gag act ggt gtt gcc aaa atg ctg gca gag aag Asn Leu Gln Cys Glu Glu Thr Gly Val Ala Lys Met Leu Ala Glu Lys 675 680 685	2244
ctc ctg cag gca aat aaa tta cac aac cag gga gag gtg gag gat att Leu Leu Gln Ala Asn Lys Leu His Asn Gln Gly Glu Val Glu Asp Ile 690 695 700	2292
ttc ttc gat tct cac tct gtc aat gct cac ata ccg cag ttt aga agc Phe Phe Asp Ser His Ser Val Asn Ala His Ile Pro Gln Phe Arg Ser 705 710 715	2340
act ctt ccg act ggt att cag gta aag gaa aac cag cct gtg ggt tcc Thr Leu Pro Thr Gly Ile Gln Val Lys Glu Asn Gln Pro Val Gly Ser 720 725 730	2388
agt gta att ttc atg aac tcc act gac ctt gac act ggc ttc aat gga Ser Val Ile Phe Met Asn Ser Thr Asp Leu Asp Thr Gly Phe Asn Gly 735 740 745 750	2436
aaa ctg gtc tat gct gtt tct gga gga aat gag gat agt tgc ttc atg Lys Leu Val Tyr Ala Val Ser Gly Gly Asn Glu Asp Ser Cys Phe Met 755 760 765	2484

FBRIC54.003APC\_Sequence Listing.txt

att gat atg gaa aca gga atg ctg aaa att tta tct cct ctt gac cgt Ile Asp Met Glu Thr Gly Met Leu Lys Ile Leu Ser Pro Leu Asp Arg 770 775 780	2532
gaa aca aca gac aaa tac acc ctg aat att acc gtc tat gac ctt ggg Glu Thr Thr Asp Lys Tyr Thr Leu Asn Ile Thr Val Tyr Asp Leu Gly 785 790 795	2580
ata ccc cag aag gct gcg tgg cgt ctt cta cat gtc gtg gtt gtc gat Ile Pro Gln Lys Ala Ala Trp Arg Leu Leu His Val Val Val Val Asp 800 805 810	2628
gcc aat gat aat cca ccc gag ttt tta cag gag agc tat ttt gtg gaa Ala Asn Asp Asn Pro Pro Glu Phe Leu Gln Glu Ser Tyr Phe Val Glu 815 820 825 830	2676
gtg agt gaa gac aag gag gta cat agt gaa atc atc cag gtt gaa gcc Val Ser Glu Asp Lys Glu Val His Ser Glu Ile Ile Gln Val Glu Ala 835 840 845	2724
aca gat aaa gac ctg ggg ccc aac gga cac gtg acg tac tca att ctt Thr Asp Lys Asp Leu Gly Pro Asn Gly His Val Thr Tyr Ser Ile Leu 850 855 860	2772
aca gac aca gac aca ttt tca att gac agc gtg acg ggt gtt gtt aac Thr Asp Thr Asp Thr Phe Ser Ile Asp Ser Val Thr Gly Val Val Asn 865 870 875	2820
atc gca cgc cct ctg gat cga gag ctg cag cat gag cac tcc tta aag Ile Ala Arg Pro Leu Asp Arg Glu Leu Gln His Glu His Ser Leu Lys 880 885 890	2868
att gag gcc agg gac caa gcc aga gaa gag cct cag ctg ttc tcc act Ile Glu Ala Arg Asp Gln Ala Arg Glu Glu Pro Gln Leu Phe Ser Thr 895 900 905 910	2916
gtc gtt gtg aaa gta tca cta gaa gat gtt aat gac aac cca cct aca Val Val Val Lys Val Ser Leu Glu Asp Val Asn Asp Asn Pro Pro Thr 915 920 925	2964
ttt att cca cct aat tat cgt gtg aaa gtc cga gag gat ctt cca gaa Phe Ile Pro Pro Asn Tyr Arg Val Lys Val Arg Glu Asp Leu Pro Glu 930 935 940	3012
gga acc gtc atc atg tgg tta gaa gcc cac gat cct gat tta ggt cag Gly Thr Val Ile Met Trp Leu Glu Ala His Asp Pro Asp Leu Gly Gln 945 950 955	3060
tct ggt cag gtg aga tac agc ctt ctg gac cac gga gaa gga aac ttc Ser Gly Gln Val Arg Tyr Ser Leu Leu Asp His Gly Glu Gly Asn Phe 960 965 970	3108
gat gtg gat aaa ctc agt gga gca gtt agg atc gtc cag cag ttg gac Asp Val Asp Lys Leu Ser Gly Ala Val Arg Ile Val Gln Gln Leu Asp 975 980 985 990	3156
ttt gag aag aag caa gtg tat aat ctc act gtg agg gcc aaa gac aag Phe Glu Lys Lys Gln Val Tyr Asn Leu Thr Val Arg Ala Lys Asp Lys 995 1000 1005	3204
gga aag cca gtt tct ctg tct tct act tgc tat gtt gaa gtt gag Gly Lys Pro Val Ser Leu Ser Ser Thr Cys Tyr Val Glu Val Glu	3249

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1010				1015				1020							
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Phe	Val	Glu	Lys	Gly	Thr	Val	Lys	Glu	Asp	Ala	Pro	Val	Gly	Ser	
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ttg	gta	atg	acg	gtg	tcg	gct	cat	gat	gag	gac	gcc	gga	aga	gat	3384
Leu	Val	Met	Thr	Val	Ser	Ala	His	Asp	Glu	Asp	Ala	Gly	Arg	Asp	
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ggg	gag	atc	cga	tac	tcc	att	aga	gat	ggc	tct	ggc	ggt	ggt	ggt	3429
Gly	Glu	Ile	Arg	Tyr	Ser	Ile	Arg	Asp	Gly	Ser	Gly	Val	Gly	Val	
			1070										1080		
ttc	aaa	ata	ggt	gaa	gag	aca	ggt	gtc	ata	gag	acg	tca	gat	cga	3474
Phe	Lys	Ile	Gly	Glu	Glu	Thr	Gly	Val	Ile	Glu	Thr	Ser	Asp	Arg	
			1085										1095		
ctg	gac	cgt	gaa	tcg	acc	tcc	cat	tat	tgg	cta	aca	gtc	ttt	gca	3519
Leu	Asp	Arg	Glu	Ser	Thr	Ser	His	Tyr	Trp	Leu	Thr	Val	Phe	Ala	
			1100										1110		
acc	gat	cag	ggt	gtc	gtg	cct	ctt	tca	tcg	ttc	ata	gag	atc	tac	3564
Thr	Asp	Gln	Gly	Val	Val	Pro	Leu	Ser	Ser	Phe	Ile	Glu	Ile	Tyr	
			1115										1125		
ata	gag	ggt	gag	gat	gtc	aat	gac	aat	gca	cca	cag	aca	tca	gag	3609
Ile	Glu	Val	Glu	Asp	Val	Asn	Asp	Asn	Ala	Pro	Gln	Thr	Ser	Glu	
			1130										1140		
cct	ggt	tat	tac	cca	gaa	atc	atg	gaa	aat	tct	cct	aaa	gat	gta	3654
Pro	Val	Tyr	Tyr	Pro	Glu	Ile	Met	Glu	Asn	Ser	Pro	Lys	Asp	Val	
			1145										1155		
tct	gtg	gtc	cag	atc	gag	gca	ttt	gat	cca	gat	tcg	agc	tct	aat	3699
Ser	Val	Val	Gln	Ile	Glu	Ala	Phe	Asp	Pro	Asp	Ser	Ser	Ser	Asn	
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gac	aag	ctc	atg	tac	aaa	att	aca	agt	gga	aat	cca	caa	gga	ttc	3744
Asp	Lys	Leu	Met	Tyr	Lys	Ile	Thr	Ser	Gly	Asn	Pro	Gln	Gly	Phe	
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Phe	Ser	Ile	His	Pro	Lys	Thr	Gly	Leu	Ile	Thr	Thr	Thr	Ser	Arg	
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aag	cta	gac	cga	gaa	cag	caa	gat	gaa	cac	ata	tta	gag	ggt	act	3834
Lys	Leu	Asp	Arg	Glu	Gln	Gln	Asp	Glu	His	Ile	Leu	Glu	Val	Thr	
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gtg	aca	gac	aat	ggt	agt	ccc	ccc	aaa	tca	acc	att	gca	aga	gtc	3879
Val	Thr	Asp	Asn	Gly	Ser	Pro	Pro	Lys	Ser	Thr	Ile	Ala	Arg	Val	
			1220										1230		
att	gtg	aaa	atc	ctt	gat	gaa	aat	gac	aac	aaa	cct	cag	ttt	ctg	3924
Ile	Val	Lys	Ile	Leu	Asp	Glu	Asn	Asp	Asn	Lys	Pro	Gln	Phe	Leu	
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caa	aag	ttc	tac	aaa	atc	aga	ctc	cct	gag	cgg	gaa	aag	cca	gac	3969

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Gln	Lys	Phe	Tyr	Lys	Ile	Arg	Leu	Pro	Glu	Arg	Glu	Lys	Pro	Asp	
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cga	gaa	aga	aat	gcc	aga	cgg	gag	ccg	ctc	tat	cgc	gtc	ata	gcc	4014
Arg	Glu	Arg	Asn	Ala	Arg	Arg	Glu	Pro	Leu	Tyr	Arg	Val	Ile	Ala	
			1265					1270					1275		
acc	gac	aag	gat	gag	ggc	ccc	aat	gca	gaa	atc	tcc	tac	agc	atc	4059
Thr	Asp	Lys	Asp	Glu	Gly	Pro	Asn	Ala	Glu	Ile	Ser	Tyr	Ser	Ile	
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gaa	gac	ggg	aat	gag	cat	ggc	aaa	ttt	ttc	atc	gaa	ccg	aaa	act	4104
Glu	Asp	Gly	Asn	Glu	His	Gly	Lys	Phe	Phe	Ile	Glu	Pro	Lys	Thr	
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gga	gtg	gtt	tcg	tcc	aag	agg	ttt	tca	gca	gct	gga	gaa	tat	gat	4149
Gly	Val	Val	Ser	Ser	Lys	Arg	Phe	Ser	Ala	Ala	Gly	Glu	Tyr	Asp	
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att	ctt	tca	att	aag	gca	gtt	gac	aat	ggg	cgc	cct	caa	aag	tca	4194
Ile	Leu	Ser	Ile	Lys	Ala	Val	Asp	Asn	Gly	Arg	Pro	Gln	Lys	Ser	
			1325					1330					1335		
tca	acc	acc	aga	ctc	cat	att	gaa	tgg	atc	tcc	aag	ccc	aaa	cag	4239
Ser	Thr	Thr	Arg	Leu	His	Ile	Glu	Trp	Ile	Ser	Lys	Pro	Lys	Gln	
			1340					1345					1350		
tcc	ctg	gag	ccc	att	tca	ttt	gaa	gaa	tca	ttt	ttt	acc	ttt	act	4284
Ser	Leu	Glu	Pro	Ile	Ser	Phe	Glu	Glu	Ser	Phe	Phe	Thr	Phe	Thr	
			1355					1360					1365		
gtg	atg	gaa	agt	gac	ccc	gtt	gct	cac	atg	att	gga	gta	ata	tct	4329
Val	Met	Glu	Ser	Asp	Pro	Val	Ala	His	Met	Ile	Gly	Val	Ile	Ser	
			1370					1375					1380		
gtg	gag	cct	cct	ggc	ata	ccc	ctt	tgg	ttt	gac	atc	act	ggg	ggc	4374
Val	Glu	Pro	Pro	Gly	Ile	Pro	Leu	Trp	Phe	Asp	Ile	Thr	Gly	Gly	
			1385					1390					1395		
aac	tac	gac	agt	cac	ttc	gat	gtg	gac	aag	gga	act	gga	acc	atc	4419
Asn	Tyr	Asp	Ser	His	Phe	Asp	Val	Asp	Lys	Gly	Thr	Gly	Thr	Ile	
			1400					1405					1410		
att	gtt	gcc	aaa	cct	ctt	gat	gca	gaa	cag	aag	tca	aac	tac	aac	4464
Ile	Val	Ala	Lys	Pro	Leu	Asp	Ala	Glu	Gln	Lys	Ser	Asn	Tyr	Asn	
			1415					1420					1425		
ctc	aca	gtc	gag	gct	aca	gat	gga	acc	acc	act	atc	ctc	act	cag	4509
Leu	Thr	Val	Glu	Ala	Thr	Asp	Gly	Thr	Thr	Thr	Ile	Leu	Thr	Gln	
			1430					1435					1440		
gta	ttc	atc	aaa	gta	ata	gac	aca	aat	gac	cat	cgt	cct	cag	ttt	4554
Val	Phe	Ile	Lys	Val	Ile	Asp	Thr	Asn	Asp	His	Arg	Pro	Gln	Phe	
			1445					1450					1455		
tct	aca	tca	aag	tat	gaa	gtt	gtt	att	cct	gaa	gat	aca	gcg	cca	4599
Ser	Thr	Ser	Lys	Tyr	Glu	Val	Val	Ile	Pro	Glu	Asp	Thr	Ala	Pro	
			1460					1465					1470		
gaa	aca	gaa	att	ttg	caa	atc	agt	gct	gtg	gat	cag	gat	gag	aaa	4644
Glu	Thr	Glu	Ile	Leu	Gln	Ile	Ser	Ala	Val	Asp	Gln	Asp	Glu	Lys	
			1475					1480					1485		

## FBRIC54.003APC\_Sequence Listing.txt

aac Asn	aaa Lys	cta Leu	atc Ile 1490	tac Tyr	act Thr	ctg Leu	cag Gln	agc Ser 1495	agt Ser	aga Arg	gat Asp	cca Pro	ctg Leu 1500	agt Ser	4689
ctc Leu	aag Lys	aaa Lys	ttt Phe 1505	cgt Arg	ctt Leu	gat Asp	cct Pro	gca Ala 1510	acc Thr	ggc Gly	tct Ser	ctc Leu	tat Tyr 1515	act Thr	4734
tct Ser	gag Glu	aaa Lys	ctg Leu 1520	gat Asp	cat His	gaa Glu	gct Ala	gtt Val 1525	tca Ser	cca Pro	gca Ala	cac His	ctc Leu 1530	acg Thr	4779
gtc Val	atg Met	gta Val	cga Arg 1535	gat Asp	caa Gln	gat Asp	gtg Val	cct Pro 1540	gta Val	aaa Lys	cgc Arg	aac Asn	ttt Phe 1545	gca Ala	4824
agg Arg	att Ile	gtg Val	gtc Val 1550	aat Asn	gtc Val	agc Ser	gac Asp	acg Thr 1555	aat Asn	gac Asp	cac His	gcc Ala	ccg Pro 1560	tgg Trp	4869
ttc Phe	acc Thr	gct Ala	tcc Ser 1565	tcc Ser	tac Tyr	aaa Lys	ggg Gly	cgg Arg 1570	gtt Val	tat Tyr	gaa Glu	tcg Ser	gca Ala 1575	gcc Ala	4914
gtt Val	ggc Gly	tca Ser	gtt Val 1580	gtg Val	ttg Leu	cag Gln	gtg Val	acg Thr 1585	gct Ala	ctg Leu	gac Asp	aag Lys	gac Asp 1590	aaa Lys	4959
ggg Gly	aaa Lys	aat Asn	gct Ala 1595	gaa Glu	gtg Val	ctg Leu	tac Tyr	tcg Ser 1600	atc Ile	gag Glu	tca Ser	gga Gly	aat Asn 1605	att Ile	5004
gga Gly	aat Asn	att Ile	gga Gly 1610	aat Asn	tct Ser	ttt Phe	atg Met	att Ile 1615	gat Asp	cct Pro	gtc Val	ttg Leu	ggc Gly 1620	tct Ser	5049
att Ile	aaa Lys	act Thr	gcc Ala 1625	aaa Lys	gaa Glu	tta Leu	gat Asp	cga Arg 1630	agt Ser	aac Asn	caa Gln	gcg Ala	gag Glu 1635	tat Tyr	5094
gat Asp	tta Leu	atg Met	gta Val 1640	aaa Lys	gct Ala	aca Thr	gat Asp	aag Lys 1645	ggc Gly	agt Ser	cca Pro	cca Pro	atg Met 1650	agt Ser	5139
gaa Glu	ata Ile	act Thr	tct Ser 1655	gtg Val	cgt Arg	atc Ile	ttt Phe	gtc Val 1660	aca Thr	att Ile	gct Ala	gac Asp	aac Asn 1665	gcc Ala	5184
tct Ser	ccg Pro	aag Lys	ttt Phe 1670	aca Thr	tca Ser	aaa Lys	gaa Glu	tat Tyr 1675	tct Ser	gtt Val	gaa Glu	ctt Leu	agt Ser 1680	gaa Glu	5229
act Thr	gtc Val	agc Ser	att Ile 1685	ggg Gly	agt Ser	ttc Phe	gtt Val	ggg Gly 1690	atg Met	gtt Val	aca Thr	gcc Ala	cat His 1695	agt Ser	5274
caa Gln	tca Ser	tca Ser	gtg Val 1700	gtg Val	tat Tyr	gaa Glu	ata Ile	aaa Lys 1705	gat Asp	gga Gly	aat Asn	aca Thr	ggt Gly 1710	gat Asp	5319
gct Ala	ttt Phe	gat Asp	att Ile 1715	aat Asn	cca Pro	cat His	tct Ser	gga Gly 1720	act Thr	atc Ile	atc Ile	act Thr	cag Gln 1725	aaa Lys	5364

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gcc	ctg	gac	ttt	gaa	act	ttg	ccc	att	tac	aca	ttg	ata	ata	caa	5409
Ala	Leu	Asp	Phe	Glu	Thr	Leu	Pro	Ile	Tyr	Thr	Leu	Ile	Ile	Gln	
			1730					1735					1740		
gga	act	aac	atg	gct	ggt	ttg	tcc	act	aat	aca	acg	ggt	cta	ggt	5454
Gly	Thr	Asn	Met	Ala	Gly	Leu	Ser	Thr	Asn	Thr	Thr	Val	Leu	Val	
			1745					1750					1755		
cac	ttg	cag	gat	gag	aat	gac	aac	gcg	cca	ggt	ttt	atg	cag	gca	5499
His	Leu	Gln	Asp	Glu	Asn	Asp	Asn	Ala	Pro	Val	Phe	Met	Gln	Ala	
			1760					1765					1770		
gaa	tat	aca	gga	ctc	att	agt	gaa	tca	gcc	tca	att	aac	agc	gtg	5544
Glu	Tyr	Thr	Gly	Leu	Ile	Ser	Glu	Ser	Ala	Ser	Ile	Asn	Ser	Val	
			1775					1780					1785		
gtc	cta	aca	gac	agg	aat	gtc	cca	ctg	gtg	att	cga	gca	gct	gat	5589
Val	Leu	Thr	Asp	Arg	Asn	Val	Pro	Leu	Val	Ile	Arg	Ala	Ala	Asp	
			1790					1795					1800		
gct	gat	aaa	gac	tca	aat	gct	ttg	ctt	gta	tat	cac	att	gtt	gaa	5634
Ala	Asp	Lys	Asp	Ser	Asn	Ala	Leu	Leu	Val	Tyr	His	Ile	Val	Glu	
			1805					1810					1815		
cca	tct	gta	cac	aca	tat	ttt	gct	att	gat	tct	agc	act	ggt	gct	5679
Pro	Ser	Val	His	Thr	Tyr	Phe	Ala	Ile	Asp	Ser	Ser	Thr	Gly	Ala	
			1820					1825					1830		
att	cat	aca	gta	cta	agt	ctg	gac	tat	gaa	gaa	aca	agt	att	ttt	5724
Ile	His	Thr	Val	Leu	Ser	Leu	Asp	Tyr	Glu	Glu	Thr	Ser	Ile	Phe	
			1835					1840					1845		
cac	ttt	acc	gtc	caa	gtg	cat	gac	atg	gga	acc	cca	cgt	tta	ttt	5769
His	Phe	Thr	Val	Gln	Val	His	Asp	Met	Gly	Thr	Pro	Arg	Leu	Phe	
			1850					1855					1860		
gct	gag	tat	gca	gcg	aat	gta	aca	gta	cat	gta	att	gac	att	aat	5814
Ala	Glu	Tyr	Ala	Ala	Asn	Val	Thr	Val	His	Val	Ile	Asp	Ile	Asn	
			1865					1870					1875		
gac	tgc	ccc	cct	gtg	ttt	gcc	aag	cca	tta	tat	gaa	gca	tct	ctt	5859
Asp	Cys	Pro	Pro	Val	Phe	Ala	Lys	Pro	Leu	Tyr	Glu	Ala	Ser	Leu	
			1880					1885					1890		
ttg	tta	cca	aca	tac	aaa	gga	gta	aaa	gtc	atc	aca	gta	aat	gct	5904
Leu	Leu	Pro	Thr	Tyr	Lys	Gly	Val	Lys	Val	Ile	Thr	Val	Asn	Ala	
			1895					1900					1905		
aca	gat	gct	gat	tca	agt	gca	ttc	tca	cag	ttg	att	tac	tcc	atc	5949
Thr	Asp	Ala	Asp	Ser	Ser	Ala	Phe	Ser	Gln	Leu	Ile	Tyr	Ser	Ile	
			1910					1915					1920		
acc	gaa	ggc	aac	atc	ggg	gag	aag	ttt	tct	atg	gac	tac	aag	act	5994
Thr	Glu	Gly	Asn	Ile	Gly	Glu	Lys	Phe	Ser	Met	Asp	Tyr	Lys	Thr	
			1925					1930					1935		
ggt	gct	ctc	act	gtc	caa	aac	aca	act	cag	tta	aga	agc	cgc	tac	6039
Gly	Ala	Leu	Thr	Val	Gln	Asn	Thr	Thr	Gln	Leu	Arg	Ser	Arg	Tyr	
			1940					1945					1950		
gag	cta	acc	gtt	aga	gct	tcc	gat	ggc	aga	ttt	gcc	ggc	ctt	acc	6084
Glu	Leu	Thr	Val	Arg	Ala	Ser	Asp	Gly	Arg	Phe	Ala	Gly	Leu	Thr	

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1955				1960				1965							
tct	gtc	aaa	att	aat	gtg	aaa	gaa	agc	aaa	gaa	agt	cac	cta	aag	6129
Ser	Val	Lys	Ile	Asn	Val	Lys	Glu	Ser	Lys	Glu	Ser	His	Leu	Lys	
			1970										1980		
ttt	acc	cag	gat	gtc	tac	tct	gcg	gta	gtg	aaa	gag	aat	tcc	acc	6174
Phe	Thr	Gln	Asp	Val	Tyr	Ser	Ala	Val	Val	Lys	Glu	Asn	Ser	Thr	
			1985										1995		
gag	gcc	gaa	aca	tta	gct	gtc	att	act	gct	att	ggg	agt	cca	atc	6219
Glu	Ala	Glu	Thr	Leu	Ala	Val	Ile	Thr	Ala	Ile	Gly	Ser	Pro	Ile	
			2000										2010		
aat	gag	cct	ttg	ttt	tat	cac	atc	ctc	aac	cca	gat	cgc	aga	ttt	6264
Asn	Glu	Pro	Leu	Phe	Tyr	His	Ile	Leu	Asn	Pro	Asp	Arg	Arg	Phe	
			2015										2025		
aaa	ata	agc	cgc	act	tca	ggg	gtt	ctg	tca	acc	act	ggc	acg	ccc	6309
Lys	Ile	Ser	Arg	Thr	Ser	Gly	Val	Leu	Ser	Thr	Thr	Gly	Thr	Pro	
			2030										2040		
ttc	gat	cgt	gag	cag	cag	gag	gcg	ttt	gat	gtg	gtt	gta	gaa	gtg	6354
Phe	Asp	Arg	Glu	Gln	Gln	Glu	Ala	Phe	Asp	Val	Val	Val	Glu	Val	
			2045										2055		
ata	gag	gaa	cat	aag	cct	tct	gca	gtg	gcc	cac	gtt	gtc	gtg	aag	6399
Ile	Glu	Glu	His	Lys	Pro	Ser	Ala	Val	Ala	His	Val	Val	Val	Lys	
			2060										2070		
gtc	att	gta	gaa	gac	caa	aat	gat	aat	gcg	ccg	gtg	ttt	gtc	aac	6444
Val	Ile	Val	Glu	Asp	Gln	Asn	Asp	Asn	Ala	Pro	Val	Phe	Val	Asn	
			2075										2085		
ctt	ccc	tac	tac	gcc	gtt	gtt	aaa	gtg	gac	act	gag	gtg	ggc	cat	6489
Leu	Pro	Tyr	Tyr	Ala	Val	Val	Lys	Val	Asp	Thr	Glu	Val	Gly	His	
			2090										2100		
gtc	att	cgc	tat	gtc	act	gct	gta	gac	aga	gac	agt	ggc	aga	aac	6534
Val	Ile	Arg	Tyr	Val	Thr	Ala	Val	Asp	Arg	Asp	Ser	Gly	Arg	Asn	
			2105										2115		
ggg	gaa	gtg	cat	tac	tac	ctc	aag	gaa	cat	cat	gaa	cac	ttt	caa	6579
Gly	Glu	Val	His	Tyr	Tyr	Leu	Lys	Glu	His	His	Glu	His	Phe	Gln	
			2120										2130		
att	gga	ccc	ttg	ggt	gaa	att	tca	ctg	aaa	aag	caa	ttt	gag	ctt	6624
Ile	Gly	Pro	Leu	Gly	Glu	Ile	Ser	Leu	Lys	Lys	Gln	Phe	Glu	Leu	
			2135										2145		
gac	acc	tta	aat	aaa	gaa	tat	ctt	gtt	aca	gtg	gtt	gca	aaa	gat	6669
Asp	Thr	Leu	Asn	Lys	Glu	Tyr	Leu	Val	Thr	Val	Val	Ala	Lys	Asp	
			2150										2160		
gga	ggg	aac	ccg	gcc	ttt	tca	gcg	gaa	gtt	atc	gtt	ccg	atc	act	6714
Gly	Gly	Asn	Pro	Ala	Phe	Ser	Ala	Glu	Val	Ile	Val	Pro	Ile	Thr	
			2165										2175		
gtc	atg	aat	aaa	gcc	atg	cct	gtg	ttt	gaa	aaa	cct	ttc	tac	agt	6759
Val	Met	Asn	Lys	Ala	Met	Pro	Val	Phe	Glu	Lys	Pro	Phe	Tyr	Ser	
			2180										2190		
gca	gag	att	gca	gag	agc	atc	cag	gtg	cac	agc	cct	gtg	gtc	cac	6804



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Ala	Glu	Ile	Ala	Glu	Ser	Ile	Gln	Val	His	Ser	Pro	Val	Val	His	
			2195					2200					2205		
gtg	cag	gct	aac	agc	ccg	gaa	ggc	ctg	aaa	gtg	ttc	tac	agc	atc	6849
Val	Gln	Ala	Asn	Ser	Pro	Glu	Gly	Leu	Lys	Val	Phe	Tyr	Ser	Ile	
			2210					2215					2220		
aca	gac	gga	gac	cct	ttc	agc	cag	ttc	act	att	aac	ttc	aat	act	6894
Thr	Asp	Gly	Asp	Pro	Phe	Ser	Gln	Phe	Thr	Ile	Asn	Phe	Asn	Thr	
			2225					2230					2235		
gga	gtt	atc	aat	gtc	ata	gct	cct	ctg	gac	ttt	gag	gcc	cac	ccg	6939
Gly	Val	Ile	Asn	Val	Ile	Ala	Pro	Leu	Asp	Phe	Glu	Ala	His	Pro	
			2240					2245					2250		
gca	tat	aag	ctg	agc	ata	cgc	gca	act	gac	tcc	ttg	acg	ggc	gct	6984
Ala	Tyr	Lys	Leu	Ser	Ile	Arg	Ala	Thr	Asp	Ser	Leu	Thr	Gly	Ala	
			2255					2260					2265		
cat	gct	gaa	gta	ttt	gtg	gac	atc	ata	gta	gac	gac	atc	aat	gat	7029
His	Ala	Glu	Val	Phe	Val	Asp	Ile	Ile	Val	Asp	Asp	Ile	Asn	Asp	
			2270					2275					2280		
aac	cct	cct	gtg	ttt	gct	cag	cag	tct	tat	gcg	gtg	acc	ctg	tct	7074
Asn	Pro	Pro	Val	Phe	Ala	Gln	Gln	Ser	Tyr	Ala	Val	Thr	Leu	Ser	
			2285					2290					2295		
gag	gca	tct	gta	att	gga	acg	tct	gtt	gtt	caa	gtt	aga	gcc	acc	7119
Glu	Ala	Ser	Val	Ile	Gly	Thr	Ser	Val	Val	Gln	Val	Arg	Ala	Thr	
			2300					2305					2310		
gat	tct	gat	tca	gaa	cca	aat	aga	gga	atc	tca	tac	cag	atg	ttt	7164
Asp	Ser	Asp	Ser	Glu	Pro	Asn	Arg	Gly	Ile	Ser	Tyr	Gln	Met	Phe	
			2315					2320					2325		
ggg	aat	cac	agc	aag	agt	cat	gat	cat	ttt	cat	gta	gac	agc	agc	7209
Gly	Asn	His	Ser	Lys	Ser	His	Asp	His	Phe	His	Val	Asp	Ser	Ser	
			2330					2335					2340		
act	ggc	ctc	atc	tca	cta	ctc	aga	acc	ctg	gat	tac	gag	cag	tcc	7254
Thr	Gly	Leu	Ile	Ser	Leu	Leu	Arg	Thr	Leu	Asp	Tyr	Glu	Gln	Ser	
			2345					2350					2355		
cgg	cag	cac	acg	att	ttt	gtg	agg	gca	gtt	gat	ggg	ggg	atg	ccc	7299
Arg	Gln	His	Thr	Ile	Phe	Val	Arg	Ala	Val	Asp	Gly	Gly	Met	Pro	
			2360					2365					2370		
acg	ctg	agc	agt	gat	gtg	att	gtc	acg	gtg	gac	gtt	acc	gac	ctc	7344
Thr	Leu	Ser	Ser	Asp	Val	Ile	Val	Thr	Val	Asp	Val	Thr	Asp	Leu	
			2375					2380					2385		
aat	ggg	aat	cca	cca	ctc	ttt	gaa	caa	cag	att	tat	gaa	gcc	aga	7389
Asn	Gly	Asn	Pro	Pro	Leu	Phe	Glu	Gln	Gln	Ile	Tyr	Glu	Ala	Arg	
			2390					2395					2400		
att	agc	gag	cac	gcc	cct	cat	ggg	cat	ttc	gtg	acc	tgt	gta	aaa	7434
Ile	Ser	Glu	His	Ala	Pro	His	Gly	His	Phe	Val	Thr	Cys	Val	Lys	
			2405					2410					2415		
gcc	tat	gat	gca	gac	agt	tca	gac	ata	gac	aag	ttg	cag	tat	tcc	7479
Ala	Tyr	Asp	Ala	Asp	Ser	Ser	Asp	Ile	Asp	Lys	Leu	Gln	Tyr	Ser	
			2420					2425					2430		

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att ctg tct ggc Ile Leu Ser Gly 2435	aat gat cat aaa cat Asn Asp His Lys His 2440	ttt gtc att gac agt Phe Val Ile Asp Ser 2445	gca Ala	7524
aca ggg att atc Thr Gly Ile Ile 2450	acc ctc tca aac ctg Thr Leu Ser Asn Leu 2455	cac cgg cac gcc ctg His Arg His Ala Leu 2460	aag Lys	7569
cca ttt tac agt Pro Phe Tyr Ser 2465	ctt aac ctg tca gtg Leu Asn Leu Ser Val 2470	tct gat gga gtt ttt Ser Asp Gly Val Phe 2475	aga Arg	7614
agt tcc acc cag Ser Ser Thr Gln 2480	gtt cat gta act gta Val His Val Thr Val 2485	att gga ggc aat ttg Ile Gly Gly Asn Leu 2490	cac His	7659
agt cct gct ttc Ser Pro Ala Phe 2495	ctt cag aac gaa tat Leu Gln Asn Glu Tyr 2500	gaa gtg gaa cta gct Glu Val Glu Leu Ala 2505	gaa Glu	7704
aac gct ccc cta Asn Ala Pro Leu 2510	cat acc ctg gtg atg His Thr Leu Val Met 2515	gag gtg aaa act acg Glu Val Lys Thr Thr 2520	gat Asp	7749
ggg gat tct ggt Gly Asp Ser Gly 2525	att tat ggt cac gtt Ile Tyr Gly His Val 2530	act tac cat att gta Thr Tyr His Ile Val 2535	aat Asn	7794
gac ttt gcc aaa Asp Phe Ala Lys 2540	gac aga ttt tac ata Asp Arg Phe Tyr Ile 2545	aat gag aga gga cag Asn Glu Arg Gly Gln 2550	ata Ile	7839
ttt act ttg gaa Phe Thr Leu Glu 2555	aaa ctt gat cga gaa Lys Leu Asp Arg Glu 2560	acc ccg gcg gag aaa Thr Pro Ala Glu Lys 2565	gtg Val	7884
atc tca gtc cgt Ile Ser Val Arg 2570	tta atg gct aag gat Leu Met Ala Lys Asp 2575	gct gga gga aaa gtt Ala Gly Gly Lys Val 2580	gct Ala	7929
ttc tgc acc gtg Phe Cys Thr Val 2585	aat gtc atc ctt aca Asn Val Ile Leu Thr 2590	gat gac aat gac aat Asp Asp Asn Asp Asn 2595	gca Ala	7974
cca caa ttt cga Pro Gln Phe Arg 2600	gca acc aaa tac gaa Ala Thr Lys Tyr Glu 2605	gtg aat atc ggg tcc Val Asn Ile Gly Ser 2610	agt Ser	8019
gct gct aaa ggg Ala Ala Lys Gly 2615	act tca gtc gta aag Thr Ser Val Val Lys 2620	tct gca agt gat gcc Ser Ala Ser Asp Ala 2625	gat Asp	8064
gag ggc tcc aat Glu Gly Ser Asn 2630	gcc gac atc acc tat Ala Asp Ile Thr Tyr 2635	gcc att gaa gca gac Ala Ile Glu Ala Asp 2640	tct Ser	8109
gaa agt gta aaa Glu Ser Val Lys 2645	gag aat ttg gaa att Glu Asn Leu Glu Ile 2650	aac aaa ctg tcc ggc Asn Lys Leu Ser Gly 2655	gta Val	8154
atc act aca aag Ile Thr Thr Lys 2660	gag agc ctc att ggc Glu Ser Leu Ile Gly 2665	ttg gaa aat gaa ttc Leu Glu Asn Glu Phe 2670	ttc Phe	8199

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act ttc ttt gtt aga gct gtg gat aat ggg tct cca tca aaa gaa	8244
Thr Phe Phe Val Arg Ala Val Asp Asn Gly Ser Pro Ser Lys Glu	
	2675 2680 2685
tct gtt gtt ctt gtc tat gtg aaa atc ctt cca ccg gaa atg cag	8289
Ser Val Val Leu Val Tyr Val Lys Ile Leu Pro Pro Glu Met Gln	
	2690 2695 2700
ctt cca aaa ttt tca gaa cct ttc tat acc ttt aca gtg tca gag	8334
Leu Pro Lys Phe Ser Glu Pro Phe Tyr Thr Phe Thr Val Ser Glu	
	2705 2710 2715
gac gtg cct gtt gga aca gag ata gat ctc atc cga gca gaa cat	8379
Asp Val Pro Val Gly Thr Glu Ile Asp Leu Ile Arg Ala Glu His	
	2720 2725 2730
agt ggg act gtt ctt tac agc ctg gtc aaa ggg aat act cca gaa	8424
Ser Gly Thr Val Leu Tyr Ser Leu Val Lys Gly Asn Thr Pro Glu	
	2735 2740 2745
agc aat agg gat gag tcc ttt gtg att gag aga cag agc ggg aga	8469
Ser Asn Arg Asp Glu Ser Phe Val Ile Asp Arg Gln Ser Gly Arg	
	2750 2755 2760
ctg aag ttg gag aag agt ctt gat cat gag aca act aag tgg tat	8514
Leu Lys Leu Glu Lys Ser Leu Asp His Glu Thr Thr Lys Trp Tyr	
	2765 2770 2775
cag ttt tcc ata ctg gcc agg tgc act caa gat gac cat gag atg	8559
Gln Phe Ser Ile Leu Ala Arg Cys Thr Gln Asp Asp His Glu Met	
	2780 2785 2790
gtg gct tct gta gat gtt agt atc caa gtg aaa gat gca aat gac	8604
Val Ala Ser Val Asp Val Ser Ile Gln Val Lys Asp Ala Asn Asp	
	2795 2800 2805
aac agc ccg gtc ttt gaa tct agt cca tat gag gca ttc att gtt	8649
Asn Ser Pro Val Phe Glu Ser Ser Pro Tyr Glu Ala Phe Ile Val	
	2810 2815 2820
gaa aac ctg cca ggg gga agt aga gta att cag atc agg gca tct	8694
Glu Asn Leu Pro Gly Gly Ser Arg Val Ile Gln Ile Arg Ala Ser	
	2825 2830 2835
gat gct gac tca gga acc aac ggc caa gtt atg tat agc ctg gat	8739
Asp Ala Asp Ser Gly Thr Asn Gly Gln Val Met Tyr Ser Leu Asp	
	2840 2845 2850
cag tca caa agt gtg gaa gtc att gaa tcc ttt gcc att aac atg	8784
Gln Ser Gln Ser Val Glu Val Ile Glu Ser Phe Ala Ile Asn Met	
	2855 2860 2865
gaa aca ggc tgg att aca act tta aag gaa ctt gac cat gaa aag	8829
Glu Thr Gly Trp Ile Thr Thr Leu Lys Glu Leu Asp His Glu Lys	
	2870 2875 2880
aga gac aat tac cag att aaa gtg gtt gca tca gat cat ggt gaa	8874
Arg Asp Asn Tyr Gln Ile Lys Val Val Ala Ser Asp His Gly Glu	
	2885 2890 2895
aag atc cag cta tcc tcc aca gcc att gtg gat gtt acc gtc acc	8919
Lys Ile Gln Leu Ser Ser Thr Ala Ile Val Asp Val Thr Val Thr	

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2900				2905				2910							
gat	gtc	aac	gat	agt	cca	cca	cga	ttc	acg	gcc	gag	atc	tat	aaa	8964
Asp	Val	Asn	Asp	Ser	Pro	Pro	Arg	Phe	Thr	Ala	Glu	Ile	Tyr	Lys	
			2915					2920					2925		
ggg	act	gtg	agt	gag	gat	gac	ccc	caa	ggt	ggg	gtg	att	gcc	atc	9009
Gly	Thr	Val	Ser	Glu	Asp	Asp	Pro	Gln	Gly	Gly	Val	Ile	Ala	Ile	
			2930					2935					2940		
tta	agt	acc	acg	gat	gct	gat	tct	gaa	gag	atc	aac	aga	caa	gtt	9054
Leu	Ser	Thr	Thr	Asp	Ala	Asp	Ser	Glu	Glu	Ile	Asn	Arg	Gln	Val	
			2945					2950					2955		
aca	tat	ttc	ata	aca	gga	ggg	gat	cct	tta	gga	cag	ttt	gcc	gtt	9099
Thr	Tyr	Phe	Ile	Thr	Gly	Gly	Asp	Pro	Leu	Gly	Gln	Phe	Ala	Val	
			2960					2965					2970		
gaa	act	ata	cag	aat	gaa	tgg	aag	gta	tat	gtg	aag	aaa	cct	cta	9144
Glu	Thr	Ile	Gln	Asn	Glu	Trp	Lys	Val	Tyr	Val	Lys	Lys	Pro	Leu	
			2975					2980					2985		
gac	agg	gaa	aaa	agg	gac	aat	tac	ctt	ctt	act	atc	acg	gca	act	9189
Asp	Arg	Glu	Lys	Arg	Asp	Asn	Tyr	Leu	Leu	Thr	Ile	Thr	Ala	Thr	
			2990					2995					3000		
gat	ggc	acc	ttc	tca	tca	aaa	gcg	ata	gtt	gaa	gtg	aaa	gtt	ctg	9234
Asp	Gly	Thr	Phe	Ser	Ser	Lys	Ala	Ile	Val	Glu	Val	Lys	Val	Leu	
			3005					3010					3015		
gat	gca	aat	gac	aac	agt	cca	gtt	tgt	gaa	aag	act	tta	tat	tca	9279
Asp	Ala	Asn	Asp	Asn	Ser	Pro	Val	Cys	Glu	Lys	Thr	Leu	Tyr	Ser	
			3020					3025					3030		
gac	act	att	cct	gaa	gac	gtc	ctt	cct	gga	aaa	ttg	atc	atg	cag	9324
Asp	Thr	Ile	Pro	Glu	Asp	Val	Leu	Pro	Gly	Lys	Leu	Ile	Met	Gln	
			3035					3040					3045		
atc	tct	gct	aca	gac	gca	gac	atc	cgc	tct	aac	gct	gaa	att	act	9369
Ile	Ser	Ala	Thr	Asp	Ala	Asp	Ile	Arg	Ser	Asn	Ala	Glu	Ile	Thr	
			3050					3055					3060		
tac	acg	tta	ttg	ggt	tca	ggt	gca	gaa	aaa	ttc	aaa	cta	aat	cca	9414
Tyr	Thr	Leu	Leu	Gly	Ser	Gly	Ala	Glu	Lys	Phe	Lys	Leu	Asn	Pro	
			3065					3070					3075		
gac	aca	ggt	gaa	ctg	aaa	acg	tca	acc	ccc	ctt	gat	cgt	gag	gag	9459
Asp	Thr	Gly	Glu	Leu	Lys	Thr	Ser	Thr	Pro	Leu	Asp	Arg	Glu	Glu	
			3080					3085					3090		
caa	gct	gtt	tat	cat	ctt	ctc	gtc	agg	gcc	aca	gat	gga	gga	gga	9504
Gln	Ala	Val	Tyr	His	Leu	Leu	Val	Arg	Ala	Thr	Asp	Gly	Gly	Gly	
			3095					3100					3105		
aga	ttc	tgc	caa	gcc	agt	att	gtc	gtc	acg	cta	gaa	gat	gtg	aac	9549
Arg	Phe	Cys	Gln	Ala	Ser	Ile	Val	Val	Thr	Leu	Glu	Asp	Val	Asn	
			3110					3115					3120		
gat	aac	gcc	ccc	gaa	ttc	tct	gcc	gat	cct	tat	gcc	atc	acc	gtg	9594
Asp	Asn	Ala	Pro	Glu	Phe	Ser	Ala	Asp	Pro	Tyr	Ala	Ile	Thr	Val	
			3125					3130					3135		
ttt	gaa	aac	aca	gag	ccg	gga	acg	ctg	ctg	aca	aga	gtg	cag	gcc	9639

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Phe	Glu	Asn	Thr	Glu	Pro	Gly	Thr	Leu	Leu	Thr	Arg	Val	Gln	Ala	
			3140					3145					3150		
aca	gat	gcc	gac	gca	gga	tta	aat	cgg	aag	att	tta	tac	tca	ctg	9684
Thr	Asp	Ala	Asp	Ala	Gly	Leu	Asn	Arg	Lys	Ile	Leu	Tyr	Ser	Leu	
			3155					3160					3165		
att	gac	tct	gct	gat	ggg	cag	ttc	tcc	att	aac	gaa	tta	tct	gga	9729
Ile	Asp	Ser	Ala	Asp	Gly	Gln	Phe	Ser	Ile	Asn	Glu	Leu	Ser	Gly	
			3170					3175					3180		
att	att	cag	tta	gaa	aaa	cct	ttg	gac	aga	gaa	ctc	cag	gca	gta	9774
Ile	Ile	Gln	Leu	Glu	Lys	Pro	Leu	Asp	Arg	Glu	Leu	Gln	Ala	Val	
			3185					3190					3195		
tac	acc	ctc	tct	ttg	aaa	gct	gtg	gat	caa	ggc	ttg	cca	agg	agg	9819
Tyr	Thr	Leu	Ser	Leu	Lys	Ala	Val	Asp	Gln	Gly	Leu	Pro	Arg	Arg	
			3200					3205					3210		
ctg	act	gcc	act	ggc	act	gtg	att	gta	tca	gtt	ctt	gac	ata	aat	9864
Leu	Thr	Ala	Thr	Gly	Thr	Val	Ile	Val	Ser	Val	Leu	Asp	Ile	Asn	
			3215					3220					3225		
gac	aac	ccc	cct	gtg	ttt	gag	tac	cgt	gaa	tat	ggt	gcc	acc	gtg	9909
Asp	Asn	Pro	Pro	Val	Phe	Glu	Tyr	Arg	Glu	Tyr	Gly	Ala	Thr	Val	
			3230					3235					3240		
tct	gag	gac	att	ctt	gtt	gga	act	gaa	gtt	ctt	caa	gtg	tat	gca	9954
Ser	Glu	Asp	Ile	Leu	Val	Gly	Thr	Glu	Val	Leu	Gln	Val	Tyr	Ala	
			3245					3250					3255		
gca	agt	cgg	gat	att	gaa	gca	aat	gca	gaa	atc	acc	tac	tca	ata	9999
Ala	Ser	Arg	Asp	Ile	Glu	Ala	Asn	Ala	Glu	Ile	Thr	Tyr	Ser	Ile	
			3260					3265					3270		
ata	agt	gga	aat	gaa	cat	ggg	aaa	ttc	agc	ata	gat	tct	aaa	aca	10044
Ile	Ser	Gly	Asn	Glu	His	Gly	Lys	Phe	Ser	Ile	Asp	Ser	Lys	Thr	
			3275					3280					3285		
ggg	gcc	gta	ttt	atc	att	gag	aat	ctg	gat	tat	gag	agc	tct	cat	10089
Gly	Ala	Val	Phe	Ile	Ile	Glu	Asn	Leu	Asp	Tyr	Glu	Ser	Ser	His	
			3290					3295					3300		
gag	tat	tac	cta	aca	gta	gag	gcc	act	gat	gga	ggc	acg	cct	tca	10134
Glu	Tyr	Tyr	Leu	Thr	Val	Glu	Ala	Thr	Asp	Gly	Gly	Thr	Pro	Ser	
			3305					3310					3315		
ctg	agc	gac	gtt	gcc	act	gtg	aac	gtt	aat	gta	aca	gat	atc	aac	10179
Leu	Ser	Asp	Val	Ala	Thr	Val	Asn	Val	Asn	Val	Thr	Asp	Ile	Asn	
			3320					3325					3330		
gat	aat	acc	cct	gtg	ttc	agc	caa	gac	acc	tac	acg	aca	gtc	atc	10224
Asp	Asn	Thr	Pro	Val	Phe	Ser	Gln	Asp	Thr	Tyr	Thr	Thr	Val	Ile	
			3335					3340					3345		
agt	gaa	gat	gcc	gtt	ctt	gag	cag	tct	gtc	atc	acg	gtt	atg	gcc	10269
Ser	Glu	Asp	Ala	Val	Leu	Glu	Gln	Ser	Val	Ile	Thr	Val	Met	Ala	
			3350					3355					3360		
gat	gat	gcc	gat	gga	cct	tcc	aac	agc	cac	atc	cac	tac	tca	att	10314
Asp	Asp	Ala	Asp	Gly	Pro	Ser	Asn	Ser	His	Ile	His	Tyr	Ser	Ile	
			3365					3370					3375		

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ata gat ggc aac caa gga agc tcg ttc aca att gac ccc gtc agg Ile Asp Gly Asn 3380 Gln Gly Ser Ser Phe Thr Ile Asp Pro Val 3390 Arg	10359
gga gaa gtc aaa gtg acc aaa ctt ctc gac cga gaa acg att tca Gly Glu Val Lys 3395 Val Thr Lys Leu Leu Asp Arg Glu Thr Ile Ser 3405	10404
ggt tac acg ctc acg gtt caa gct tct gat aat ggc agt cca ccc Gly Tyr Thr Leu 3410 Thr Val Gln Ala Ser Asp Asn Gly Ser Pro Pro 3420	10449
aga gtc aac acg acg acc gtg aac atc gat gtg tcc gat gtc aat Arg Val Asn Thr 3425 Thr Thr Val Asn Ile 3430 Asp Val Ser Asp Val Asn 3435	10494
gac aac gcg ccc gtc ttc tcc agg gga aac tac agt gtc att atc Asp Asn Ala Pro 3440 Val Phe Ser Arg Gly Asn Tyr Ser Val Ile Ile 3450	10539
cag gaa aat aag cca gtg ggc ttc agc gtg ctg cag ctg gta gta Gln Glu Asn Lys 3455 Pro Val Gly Phe Ser Val Leu Gln Leu Val Val 3465	10584
aca gat gag gat tct tcc cat aac ggt cca ccc ttc ttc ttt act Thr Asp Glu Asp 3470 Ser Ser His Asn Gly Pro Pro Phe Phe Phe Thr 3480	10629
att gta act gga aat gat gag aag gct ttt gaa gtt aac ccg caa Ile Val Thr Gly Asn Asp Glu Lys Ala Phe Glu Val Asn Pro Gln 3495	10674
gga gtc ctc ctg aca tca tct gcc atc aag agg aag gag aaa gat Gly Val Leu Leu 3500 Thr Ser Ser Ala Ile Lys Arg Lys Glu Lys Asp 3510	10719
cat tac tta ctg cag gtg aag gtg gca gat aat gga aag cct cag His Tyr Leu Leu 3515 Gln Val Lys Val Ala Asp Asn Gly Lys Pro Gln 3525	10764
ttg tca tct ttg aca tac att gac att agg gta att gag gag agc Leu Ser Ser Leu 3530 Thr Tyr Ile Asp Ile Arg Val Ile Glu Glu Ser 3540	10809
atc tat ccg cct gcg att ttg ccc ctg gag att ttc atc acc tct Ile Tyr Pro Pro 3545 Ala Ile Leu Pro Leu Glu Ile Phe Ile Thr Ser 3555	10854
tct gga gaa gaa tac tca ggt ggc gtc att ggg aag atc cat gcc Ser Gly Glu Glu 3560 Tyr Ser Gly Gly Val Ile Gly Lys Ile His Ala 3570	10899
aca gac cag gac gtg tat gat act cta acc tac agt ctc gac cct Thr Asp Gln Asp 3575 Val Tyr Asp Thr Leu Thr Tyr Ser Leu Asp Pro 3585	10944
cag atg gac aac ctg ttc tct gtt tcc agc aca ggg ggc aag ctg Gln Met Asp Asn 3590 Leu Phe Ser Val Ser Ser Thr Gly Gly Lys Leu 3600	10989
ata gca cac aaa aag cta gac ata ggg caa tac ctt ctc aat gtc Ile Ala His Lys 3605 Lys Leu Asp Ile Gly Gln Tyr Leu Leu Asn Val 3615	11034

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agc gta aca gat	ggg aag ttc acg acg	gtg gcc gac atc aca	gtg	11079
Ser Val Thr Asp	Gly Lys Phe Thr Thr	Val Ala Asp Ile Thr	Val	
3620	3625	3630		
cat atc aga caa	gtc aca cag gag atg	ttg aac cac acc atc	gcg	11124
His Ile Arg Gln	Val Thr Gln Glu Met	Leu Asn His Thr Ile	Ala	
3635	3640	3645		
atc cgc ttt gcc	aac ctc act ccg gaa	gaa ttc gtt ggt gac	tac	11169
Ile Arg Phe Ala	Asn Leu Thr Pro Glu	Glu Phe Val Gly Asp	Tyr	
3650	3655	3660		
tgg cgc aac ttc	cag cga gct tta cgg	aac atc ctg ggt gtg	agg	11214
Trp Arg Asn Phe	Gln Arg Ala Leu Arg	Asn Ile Leu Gly Val	Arg	
3665	3670	3675		
agg aac gac ata	cag att gtt agt ttg	cag tcc tct gaa cct	cac	11259
Arg Asn Asp Ile	Gln Ile Val Ser Leu	Gln Ser Ser Glu Pro	His	
3680	3685	3690		
cca cat ctg gac	gtc tta ctt ttt gta	gag aaa cca ggt agt	gct	11304
Pro His Leu Asp	Val Leu Leu Phe Val	Glu Lys Pro Gly Ser	Ala	
3695	3700	3705		
cag atc tca aca	aaa caa ctt ctg cac	aag att aac tct tcc	gtg	11349
Gln Ile Ser Thr	Lys Gln Leu Leu His	Lys Ile Asn Ser Ser	Val	
3710	3715	3720		
act gac att gag	gaa atc att gga gtt	agg ata ctg aat gta	ttc	11394
Thr Asp Ile Glu	Glu Ile Ile Gly Val	Arg Ile Leu Asn Val	Phe	
3725	3730	3735		
cag aaa ctc tgc	gcg gga ctg gac tgc	ccc tgg aag ttc tgc	gat	11439
Gln Lys Leu Cys	Ala Gly Leu Asp Cys	Pro Trp Lys Phe Cys	Asp	
3740	3745	3750		
gaa aag gtg tct	gtg gat gaa agt gtg	atg tca aca cac agc	aca	11484
Glu Lys Val Ser	Val Asp Glu Ser Val	Met Ser Thr His Ser	Thr	
3755	3760	3765		
gcc aga ctg agt	ttt gtg act ccc cgc	cac cac agg gca gcg	gtg	11529
Ala Arg Leu Ser	Phe Val Thr Pro Arg	His His Arg Ala Ala	Val	
3770	3775	3780		
tgt ctc tgc aaa	gag gga agg tgc cca	cct gtc cac cat ggc	tgt	11574
Cys Leu Cys Lys	Glu Gly Arg Cys Pro	Pro Val His His Gly	Cys	
3785	3790	3795		
gaa gat gat ccg	tgc cct gag gga tcc	gaa tgt gtg tct gat	ccc	11619
Glu Asp Asp Pro	Cys Pro Glu Gly Ser	Glu Cys Val Ser Asp	Pro	
3800	3805	3810		
tgg gag gag aaa	cac acc tgt gtc tgt	ccc agc ggc agg ttt	ggt	11664
Trp Glu Glu Lys	His Thr Cys Val Cys	Pro Ser Gly Arg Phe	Gly	
3815	3820	3825		
cag tgc cca ggg	agt tca tct atg aca	ctg act gga aac agc	tac	11709
Gln Cys Pro Gly	Ser Ser Ser Met Thr	Leu Thr Gly Asn Ser	Tyr	
3830	3835	3840		
gtg aaa tac cgt	ctg acg gaa aat gaa	aac aaa tta gag atg	aaa	11754
Val Lys Tyr Arg	Leu Thr Glu Asn Glu	Asn Lys Leu Glu Met	Lys	

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3845				3850				3855							
ctg	acc	atg	agg	ctc	aga	aca	tat	tcc	acg	cat	gcg	gtt	gtc	atg	11799
Leu	Thr	Met	Arg	Leu	Arg	Thr	Tyr	Ser	Thr	His	Ala	Val	Val	Met	
			3860					3865					3870		
tat	gct	cga	gga	act	gac	tat	agc	atc	ttg	gag	att	cat	cat	gga	11844
Tyr	Ala	Arg	Gly	Thr	Asp	Tyr	Ser	Ile	Leu	Glu	Ile	His	His	Gly	
			3875					3880					3885		
agg	ctg	cag	tac	aag	ttt	gac	tgt	gga	agt	ggc	cct	gga	att	gtc	11889
Arg	Leu	Gln	Tyr	Lys	Phe	Asp	Cys	Gly	Ser	Gly	Pro	Gly	Ile	Val	
			3890					3895					3900		
tct	gtt	cag	agc	att	cag	gtc	aat	gat	ggg	cag	tgg	cac	gca	gtg	11934
Ser	Val	Gln	Ser	Ile	Gln	Val	Asn	Asp	Gly	Gln	Trp	His	Ala	Val	
			3905					3910					3915		
gcc	ctg	gaa	gtg	aat	gga	aac	tat	gct	cgc	ttg	gtt	cta	gac	caa	11979
Ala	Leu	Glu	Val	Asn	Gly	Asn	Tyr	Ala	Arg	Leu	Val	Leu	Asp	Gln	
			3920					3925					3930		
gtt	cat	act	gca	tcg	ggc	aca	gcc	cca	ggg	act	ctg	aaa	acc	ctg	12024
Val	His	Thr	Ala	Ser	Gly	Thr	Ala	Pro	Gly	Thr	Leu	Lys	Thr	Leu	
			3935					3940					3945		
aac	ctg	gat	aac	tat	gtg	ttt	ttt	ggt	ggc	cac	atc	cgt	cag	cag	12069
Asn	Leu	Asp	Asn	Tyr	Val	Phe	Phe	Gly	Gly	His	Ile	Arg	Gln	Gln	
			3950					3955					3960		
gga	aca	agg	cat	gga	aga	agt	cct	caa	gtt	ggt	aat	ggt	ttc	agg	12114
Gly	Thr	Arg	His	Gly	Arg	Ser	Pro	Gln	Val	Gly	Asn	Gly	Phe	Arg	
			3965					3970					3975		
ggt	tgt	atg	gac	tcc	att	tat	ttg	aat	ggg	cag	gag	ctc	cct	tta	12159
Gly	Cys	Met	Asp	Ser	Ile	Tyr	Leu	Asn	Gly	Gln	Glu	Leu	Pro	Leu	
			3980					3985					3990		
aac	agc	aaa	ccc	aga	agc	tat	gca	cac	atc	gaa	gag	tcg	gtg	gat	12204
Asn	Ser	Lys	Pro	Arg	Ser	Tyr	Ala	His	Ile	Glu	Glu	Ser	Val	Asp	
			3995					4000					4005		
gta	tct	cca	ggc	tgc	ttc	ctg	acg	gcc	acg	gaa	gac	tgc	gcc	agc	12249
Val	Ser	Pro	Gly	Cys	Phe	Leu	Thr	Ala	Thr	Glu	Asp	Cys	Ala	Ser	
			4010					4015					4020		
aac	cct	tgc	cag	aat	gga	ggc	gtt	tgc	aat	ccg	tca	cct	gct	gga	12294
Asn	Pro	Cys	Gln	Asn	Gly	Gly	Val	Cys	Asn	Pro	Ser	Pro	Ala	Gly	
			4025					4030					4035		
ggt	tat	tac	tgc	aaa	tgc	agt	gcc	ttg	tac	ata	ggg	acc	cac	tgt	12339
Gly	Tyr	Tyr	Cys	Lys	Cys	Ser	Ala	Leu	Tyr	Ile	Gly	Thr	His	Cys	
			4040					4045					4050		
gag	ata	agc	gtc	aat	ccg	tgt	tcc	tcc	aac	cca	tgc	ctc	tat	ggg	12384
Glu	Ile	Ser	Val	Asn	Pro	Cys	Ser	Ser	Asn	Pro	Cys	Leu	Tyr	Gly	
			4055					4060					4065		
ggc	acg	tgt	gtt	gtc	gac	aac	gga	ggc	ttt	gtt	tgc	cag	tgt	aga	12429
Gly	Thr	Cys	Val	Val	Asp	Asn	Gly	Gly	Phe	Val	Cys	Gln	Cys	Arg	
			4070					4075					4080		
gga	tta	tat	act	ggt	cag	agg	tgt	cag	ctt	agt	cca	tac	tgc	aaa	12474



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Gly	Leu	Tyr	Thr	Gly	Gln	Arg	Cys	Gln	Leu	Ser	Pro	Tyr	Cys	Lys	
			4085					4090					4095		
gat	gaa	ccc	tgt	aag	aat	ggc	gga	aca	tgc	ttt	gac	agt	ttg	gat	12519
Asp	Glu	Pro	Cys	Lys	Asn	Gly	Gly	Thr	Cys	Phe	Asp	Ser	Leu	Asp	
			4100					4105					4110		
ggc	gcc	gtt	tgt	cag	tgt	gat	tcg	ggt	ttt	agg	gga	gaa	agg	tgt	12564
Gly	Ala	Val	Cys	Gln	Cys	Asp	Ser	Gly	Phe	Arg	Gly	Glu	Arg	Cys	
			4115					4120					4125		
cag	agt	gat	atc	gac	gag	tgc	tct	gga	aac	cct	tgc	ctg	cac	ggg	12609
Gln	Ser	Asp	Ile	Asp	Glu	Cys	Ser	Gly	Asn	Pro	Cys	Leu	His	Gly	
			4130					4135					4140		
gcc	ctc	tgt	gag	aac	acg	cac	ggc	tcc	tat	cac	tgc	aac	tgc	agc	12654
Ala	Leu	Cys	Glu	Asn	Thr	His	Gly	Ser	Tyr	His	Cys	Asn	Cys	Ser	
			4145					4150					4155		
cac	gag	tac	agg	gga	cgt	cac	tgc	gag	gat	gct	gcg	ccc	aac	cag	12699
His	Glu	Tyr	Arg	Gly	Arg	His	Cys	Glu	Asp	Ala	Ala	Pro	Asn	Gln	
			4160					4165					4170		
tat	gtg	tcc	acg	ccg	tgg	aac	att	ggg	ttg	gcg	gaa	gga	att	gga	12744
Tyr	Val	Ser	Thr	Pro	Trp	Asn	Ile	Gly	Leu	Ala	Glu	Gly	Ile	Gly	
			4175					4180					4185		
atc	gtt	gtg	ttt	gtt	gca	ggg	ata	ttt	tta	ctg	gtg	gtg	gtg	ttt	12789
Ile	Val	Val	Phe	Val	Ala	Gly	Ile	Phe	Leu	Leu	Val	Val	Val	Phe	
			4190					4195					4200		
gtt	ctc	tgc	cgt	aag	atg	att	agt	cgg	aaa	aag	aag	cat	cag	gct	12834
Val	Leu	Cys	Arg	Lys	Met	Ile	Ser	Arg	Lys	Lys	Lys	His	Gln	Ala	
			4205					4210					4215		
gaa	cct	aaa	gac	aag	cac	ctg	gga	ccc	gct	acg	gct	ttc	ttg	caa	12879
Glu	Pro	Lys	Asp	Lys	His	Leu	Gly	Pro	Ala	Thr	Ala	Phe	Leu	Gln	
			4220					4225					4230		
aga	ccg	tat	ttt	gat	tcc	aag	cta	aat	aag	aac	att	tac	tca	gac	12924
Arg	Pro	Tyr	Phe	Asp	Ser	Lys	Leu	Asn	Lys	Asn	Ile	Tyr	Ser	Asp	
			4235					4240					4245		
ata	cca	ccc	cag	gtg	cct	gtc	cgg	cct	att	tcc	tac	acc	ccg	agt	12969
Ile	Pro	Pro	Gln	Val	Pro	Val	Arg	Pro	Ile	Ser	Tyr	Thr	Pro	Ser	
			4250					4255					4260		
att	cca	agt	gac	tca	aga	aac	aat	ctg	gac	cga	aat	tcc	ttc	gaa	13014
Ile	Pro	Ser	Asp	Ser	Arg	Asn	Asn	Leu	Asp	Arg	Asn	Ser	Phe	Glu	
			4265					4270					4275		
gga	tct	gct	atc	cca	gag	cat	ccc	gaa	ttc	agc	act	ttt	aac	ccc	13059
Gly	Ser	Ala	Ile	Pro	Glu	His	Pro	Glu	Phe	Ser	Thr	Phe	Asn	Pro	
			4280					4285					4290		
gag	tct	gtg	cac	ggg	cac	cga	aaa	gca	gtg	gcg	gtc	tgc	agc	gtg	13104
Glu	Ser	Val	His	Gly	His	Arg	Lys	Ala	Val	Ala	Val	Cys	Ser	Val	
			4295					4300					4305		
gcg	cca	aac	ctg	cct	ccc	cca	ccc	cct	tca	aac	tcc	cct	tct	gac	13149
Ala	Pro	Asn	Leu	Pro	Pro	Pro	Pro	Pro	Ser	Asn	Ser	Pro	Ser	Asp	
			4310					4315					4320		

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agc gac tcc atc cag aag cct agc tgg gac ttt gac tat gac aca	13194
Ser Asp Ser Ile Gln Lys Pro Ser Trp Asp Phe Asp Tyr Asp Thr	
4325 4330 4335	
aaa gtg gtg gat ctt gat ccc tgt ctt tcc aag aag cct cta gag	13239
Lys Val Val Asp Leu Asp Pro Cys Leu Ser Lys Lys Pro Leu Glu	
4340 4345 4350	
gaa aag cct tcc cag cca tac agt gcc cgg gaa agc ctg tct gaa	13284
Glu Lys Pro Ser Gln Pro Tyr Ser Ala Arg Glu Ser Leu Ser Glu	
4355 4360 4365	
gtg cag tcc ctg agc tcc ttc cag tcc gaa tcg tgc gat gac aat	13329
Val Gln Ser Leu Ser Ser Phe Gln Ser Glu Ser Cys Asp Asp Asn	
4370 4375 4380	
gaa tct ttg gct gct cct gac ctc agc aaa cca aga ggg tat cac	13374
Glu Ser Leu Ala Ala Pro Asp Leu Ser Lys Pro Arg Gly Tyr His	
4385 4390 4395	
tgg gat aca tca gat tgg atg cca agc gtt cct ctg ccg gac ata	13419
Trp Asp Thr Ser Asp Trp Met Pro Ser Val Pro Leu Pro Asp Ile	
4400 4405 4410	
caa gag ttc ccc aac tat gag gtg att gat gag cag aca ccc ctg	13464
Gln Glu Phe Pro Asn Tyr Glu Val Ile Asp Glu Gln Thr Pro Leu	
4415 4420 4425	
tac tca gca gat cca aac gcc atc gat acg gac tat tac cct gga	13509
Tyr Ser Ala Asp Pro Asn Ala Ile Asp Thr Asp Tyr Tyr Pro Gly	
4430 4435 4440	
ggc tac gac atc gaa agt gat ttt cct cca ccc cca gaa gac ttc	13554
Gly Tyr Asp Ile Glu Ser Asp Phe Pro Pro Pro Glu Asp Phe	
4445 4450 4455	
ccc gca gct gat gag cta cca ccg tta ccg ccc gaa ttc agc aat	13599
Pro Ala Ala Asp Glu Leu Pro Pro Leu Pro Pro Glu Phe Ser Asn	
4460 4465 4470	
cag ttt gaa tcc atc cac cct cct aga gac atg cct gcc gcg ggt	13644
Gln Phe Glu Ser Ile His Pro Pro Arg Asp Met Pro Ala Ala Gly	
4475 4480 4485	
agc ttg ggt tct tca tca aga aac cgg cag agg ttc aac ttg aat	13689
Ser Leu Gly Ser Ser Ser Arg Asn Arg Gln Arg Phe Asn Leu Asn	
4490 4495 4500	
cag tat ttg ccc aat ttt tat ccc ctc gat atg tct gaa cct caa	13734
Gln Tyr Leu Pro Asn Phe Tyr Pro Leu Asp Met Ser Glu Pro Gln	
4505 4510 4515	
aca aaa ggc act ggt gag aat agt act tgt aga gaa ccc cat gcc	13779
Thr Lys Gly Thr Gly Glu Asn Ser Thr Cys Arg Glu Pro His Ala	
4520 4525 4530	
cct tac ccg cca ggg tat caa aga cac ttc gag gcg ccc gct gtc	13824
Pro Tyr Pro Pro Gly Tyr Gln Arg His Phe Glu Ala Pro Ala Val	
4535 4540 4545	
gag agc atg ccc atg tct gtg tac gcc tcc acc gcc tcc tgc tct	13869
Glu Ser Met Pro Met Ser Val Tyr Ala Ser Thr Ala Ser Cys Ser	
4550 4555 4560	

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gac gtg tca gcc tgc tgc gaa gtg gag tcc gag gtc atg atg agt	13914
Asp Val Ser Ala Cys Cys Glu Val Glu Ser Glu Val Met Met Ser	
4565 4570 4575	
gac tat gag agc ggg gac gac ggc cac ttc gaa gag gtg acg atc	13959
Asp Tyr Glu Ser Gly Asp Asp Gly His Phe Glu Glu Val Thr Ile	
4580 4585 4590	
ccg ccc ctg gat tcc cag cag cac acg gaa gtc tga ctctcaactc	14005
Pro Pro Leu Asp Ser Gln Gln His Thr Glu Val	
4595 4600	
cccccaaagt gcctgacttt agtgaaccta gaggtgatgt gagtaatccg cgctgttctt	14065
tgcagcagtg cttccaagct ttttttggtg agccgaatgg gcatggctgc gctggatcct	14125
gcgccctctgg acgtgctagc catttccagt gtcccaacta ctgtcatcgt gaggttttca	14185
tcggctgtgc catttcccaa cgtcttttgg gatttacatc tgtctgtgtt aaaataatca	14245
aacgaaaaat cagtcctgtg ttgtcagcat gattcatgta tttatataga tttgattatt	14305
ttaattttcc tgtctctttt ttttgtaa at tttatgtaca gatttgattt ttcatagttt	14365
taactagatt tccaagatat tttgtgcatt tgtttcaact gaattttggt ggtgtcagtg	14425
ccattatcta gcaccctgat tttttttttt ttactataac cagggtttca ttctgtcttt	14485
ttccactgaa gtgtgacatt ttgttagtac atttcagtgt agtcattcat ttctagctgt	14545
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aattataaac atttttcatt attggaaagt gtaacgggga ccttctgcat acctgtttag	14665
aaccaaacc accatgacac agtttttata gtgtctgtat atttgtgatg caatgggtctt	14725
gtaaaggttt ttaatgaaaa ctaccattag ccagtccttc ttactgacaa taaattatta	14785
ataaaat	14792

<210> 5  
 <211> 4602  
 <212> PRT  
 <213> Homo sapiens

<400> 5

Met Gly Arg His Leu Ala Leu Leu Leu Leu Leu Leu Leu Phe Gln
1 5 10 15

His Phe Gly Asp Ser Asp Gly Ser Gln Arg Leu Glu Gln Thr Pro Leu
20 25 30

Gln Phe Thr His Leu Glu Tyr Asn Val Thr Val Gln Glu Asn Ser Ala
35 40 45

Ala Lys Thr Tyr Val Gly His Pro Val Lys Met Gly Val Tyr Ile Thr
50 55 60

FBRIC54.003APC\_Sequence Listing.txt

His Pro Ala Trp Glu Val Arg Tyr Lys Ile Val Ser Gly Asp Ser Glu  
 65 70 75 80  
 Asn Leu Phe Lys Ala Glu Glu Tyr Ile Leu Gly Asp Phe Cys Phe Leu  
 85 90 95  
 Arg Ile Arg Thr Lys Gly Gly Asn Thr Ala Ile Leu Asn Arg Glu Val  
 100 105 110  
 Lys Asp His Tyr Thr Leu Ile Val Lys Ala Leu Glu Lys Asn Thr Asn  
 115 120 125  
 Val Glu Ala Arg Thr Lys Val Arg Val Gln Val Leu Asp Thr Asn Asp  
 130 135 140  
 Leu Arg Pro Leu Phe Ser Pro Thr Ser Tyr Ser Val Ser Leu Pro Glu  
 145 150 155 160  
 Asn Thr Ala Ile Arg Thr Ser Ile Ala Arg Val Ser Ala Thr Asp Ala  
 165 170 175  
 Asp Ile Gly Thr Asn Gly Glu Phe Tyr Tyr Ser Phe Lys Asp Arg Thr  
 180 185 190  
 Asp Met Phe Ala Ile His Pro Thr Ser Gly Val Ile Val Leu Thr Gly  
 195 200 205  
 Arg Leu Asp Tyr Leu Glu Thr Lys Leu Tyr Glu Met Glu Ile Leu Ala  
 210 215 220  
 Ala Asp Arg Gly Met Lys Leu Tyr Gly Ser Ser Gly Ile Ser Ser Met  
 225 230 235 240  
 Ala Lys Leu Thr Val His Ile Glu Gln Ala Asn Glu Cys Ala Pro Val  
 245 250 255  
 Ile Thr Ala Val Thr Leu Ser Pro Ser Glu Leu Asp Arg Asp Pro Ala  
 260 265 270  
 Tyr Ala Ile Val Thr Val Asp Asp Cys Asp Gln Gly Ala Asn Gly Asp  
 275 280 285  
 Ile Ala Ser Leu Ser Ile Val Ala Gly Asp Leu Leu Gln Gln Phe Arg  
 290 295 300  
 Thr Val Arg Ser Phe Pro Gly Ser Lys Glu Tyr Lys Val Lys Ala Ile

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305         310         315         320

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305	310														315				320			
Gly	Asp	Ile	Asp	Trp 325	Asp	Ser	His	Pro	Phe 330	Gly	Tyr	Asn	Leu	Thr 335	Leu							
Gln	Ala	Lys	Asp 340	Lys	Gly	Thr	Pro	Pro 345	Gln	Phe	Ser	Ser	Val 350	Lys	Val							
Ile	His	Val 355	Thr	Ser	Pro	Gln	Phe 360	Lys	Ala	Gly	Pro	Val 365	Lys	Phe	Glu							
Lys	Asp 370	Val	Tyr	Arg	Ala	Glu 375	Ile	Ser	Glu	Phe	Ala 380	Pro	Pro	Asn	Thr							
Pro 385	Val	Val	Met	Val	Lys 390	Ala	Ile	Pro	Ala	Tyr 395	Ser	His	Leu	Arg	Tyr 400							
Val	Phe	Lys	Arg	Thr 405	Pro	Gly	Lys	Ala	Lys 410	Phe	Ser	Leu	Asn	Tyr 415	Asn							
Thr	Gly	Leu	Ile 420	Ser	Ile	Leu	Glu	Pro 425	Val	Lys	Arg	Gln	Gln 430	Ala	Ala							
His	Phe	Glu 435	Leu	Glu	Val	Thr	Thr 440	Ser	Asp	Arg	Lys	Ala 445	Ser	Thr	Lys							
Val	Leu 450	Val	Lys	Val	Leu	Gly 455	Ala	Asn	Ser	Asn	Pro 460	Pro	Glu	Phe	Thr							
Gln 465	Thr	Ala	Tyr	Lys	Ala 470	Ala	Phe	Asp	Glu	Asn 475	Val	Pro	Ile	Gly	Thr 480							
Thr	Ile	Met	Ser	Leu 485	Ser	Ala	Val	Asp	Pro 490	Asp	Glu	Gly	Glu	Asn 495	Gly							
Tyr	Val	Thr	Tyr 500	Ser	Ile	Ala	Asn	Leu 505	Asn	His	Val	Pro	Phe 510	Ala	Ile							
Asp	His	Phe 515	Thr	Gly	Ala	Val	Ser 520	Thr	Ser	Glu	Asn	Leu 525	Asp	Tyr	Glu							
Leu	Met 530	Pro	Arg	Val	Tyr	Thr 535	Leu	Arg	Ile	Arg	Ala 540	Ser	Asp	Trp	Gly							
Leu 545	Pro	Tyr	Arg	Arg	Glu 550	Val	Glu	Val	Leu	Ala 555	Thr	Ile	Thr	Leu	Asn 560							

FBRIC54.003APC\_Sequence Listing.txt

Asn Leu Asn Asp Asn Thr Pro Leu Phe Glu Lys Ile Asn Cys Glu Gly  
565 570 575

Thr Ile Pro Arg Asp Leu Gly Val Gly Glu Gln Ile Thr Thr Val Ser  
580 585 590

Ala Ile Asp Ala Asp Glu Leu Gln Leu Val Gln Tyr Gln Ile Glu Ala  
595 600 605

Gly Asn Glu Leu Asp Leu Phe Ser Leu Asn Pro Asn Ser Gly Val Leu  
610 615 620

Ser Leu Lys Arg Ser Leu Met Asp Gly Leu Gly Ala Lys Val Ser Phe  
625 630 635 640

His Ser Leu Arg Ile Thr Ala Thr Asp Gly Glu Asn Phe Ala Thr Pro  
645 650 655

Leu Tyr Ile Asn Ile Thr Val Ala Ala Ser His Lys Leu Val Asn Leu  
660 665 670

Gln Cys Glu Glu Thr Gly Val Ala Lys Met Leu Ala Glu Lys Leu Leu  
675 680 685

Gln Ala Asn Lys Leu His Asn Gln Gly Glu Val Glu Asp Ile Phe Phe  
690 695 700

Asp Ser His Ser Val Asn Ala His Ile Pro Gln Phe Arg Ser Thr Leu  
705 710 715 720

Pro Thr Gly Ile Gln Val Lys Glu Asn Gln Pro Val Gly Ser Ser Val  
725 730 735

Ile Phe Met Asn Ser Thr Asp Leu Asp Thr Gly Phe Asn Gly Lys Leu  
740 745 750

Val Tyr Ala Val Ser Gly Gly Asn Glu Asp Ser Cys Phe Met Ile Asp  
755 760 765

Met Glu Thr Gly Met Leu Lys Ile Leu Ser Pro Leu Asp Arg Glu Thr  
770 775 780

Thr Asp Lys Tyr Thr Leu Asn Ile Thr Val Tyr Asp Leu Gly Ile Pro  
785 790 795 800

Gln Lys Ala Ala Trp Arg Leu Leu His Val Val Val Val Asp Ala Asn  
805 810 815

FBRIC54.003APC\_Sequence Listing.txt

Asp Asn Pro Pro Glu Phe Leu Gln Glu Ser Tyr Phe Val Glu Val Ser  
820 825 830

Glu Asp Lys Glu Val His Ser Glu Ile Ile Gln Val Glu Ala Thr Asp  
835 840 845

Lys Asp Leu Gly Pro Asn Gly His Val Thr Tyr Ser Ile Leu Thr Asp  
850 855 860

Thr Asp Thr Phe Ser Ile Asp Ser Val Thr Gly Val Val Asn Ile Ala  
865 870 875 880

Arg Pro Leu Asp Arg Glu Leu Gln His Glu His Ser Leu Lys Ile Glu  
885 890 895

Ala Arg Asp Gln Ala Arg Glu Glu Pro Gln Leu Phe Ser Thr Val Val  
900 905 910

Val Lys Val Ser Leu Glu Asp Val Asn Asp Asn Pro Pro Thr Phe Ile  
915 920 925

Pro Pro Asn Tyr Arg Val Lys Val Arg Glu Asp Leu Pro Glu Gly Thr  
930 935 940

Val Ile Met Trp Leu Glu Ala His Asp Pro Asp Leu Gly Gln Ser Gly  
945 950 955 960

Gln Val Arg Tyr Ser Leu Leu Asp His Gly Glu Gly Asn Phe Asp Val  
965 970 975

Asp Lys Leu Ser Gly Ala Val Arg Ile Val Gln Gln Leu Asp Phe Glu  
980 985 990

Lys Lys Gln Val Tyr Asn Leu Thr Val Arg Ala Lys Asp Lys Gly Lys  
995 1000 1005

Pro Val Ser Leu Ser Ser Thr Cys Tyr Val Glu Val Glu Val Val  
1010 1015 1020

Asp Val Asn Glu Asn Leu His Pro Pro Val Phe Ser Ser Phe Val  
1025 1030 1035

Glu Lys Gly Thr Val Lys Glu Asp Ala Pro Val Gly Ser Leu Val  
1040 1045 1050

Met Thr Val Ser Ala His Asp Glu Asp Ala Gly Arg Asp Gly Glu  
1055 1060 1065

FBRIC54.003APC\_Sequence Listing.txt

Ile	Arg	Tyr	Ser	Ile	Arg	Asp	Gly	Ser	Gly	Val	Gly	Val	Phe	Lys
	1070					1075					1080			
Ile	Gly	Glu	Glu	Thr	Gly	Val	Ile	Glu	Thr	Ser	Asp	Arg	Leu	Asp
	1085					1090					1095			
Arg	Glu	Ser	Thr	Ser	His	Tyr	Trp	Leu	Thr	Val	Phe	Ala	Thr	Asp
	1100					1105					1110			
Gln	Gly	Val	Val	Pro	Leu	Ser	Ser	Phe	Ile	Glu	Ile	Tyr	Ile	Glu
	1115					1120					1125			
Val	Glu	Asp	Val	Asn	Asp	Asn	Ala	Pro	Gln	Thr	Ser	Glu	Pro	Val
	1130					1135					1140			
Tyr	Tyr	Pro	Glu	Ile	Met	Glu	Asn	Ser	Pro	Lys	Asp	Val	Ser	Val
	1145					1150					1155			
Val	Gln	Ile	Glu	Ala	Phe	Asp	Pro	Asp	Ser	Ser	Ser	Asn	Asp	Lys
	1160					1165					1170			
Leu	Met	Tyr	Lys	Ile	Thr	Ser	Gly	Asn	Pro	Gln	Gly	Phe	Phe	Ser
	1175					1180					1185			
Ile	His	Pro	Lys	Thr	Gly	Leu	Ile	Thr	Thr	Thr	Ser	Arg	Lys	Leu
	1190					1195					1200			
Asp	Arg	Glu	Gln	Gln	Asp	Glu	His	Ile	Leu	Glu	Val	Thr	Val	Thr
	1205					1210					1215			
Asp	Asn	Gly	Ser	Pro	Pro	Lys	Ser	Thr	Ile	Ala	Arg	Val	Ile	Val
	1220					1225					1230			
Lys	Ile	Leu	Asp	Glu	Asn	Asp	Asn	Lys	Pro	Gln	Phe	Leu	Gln	Lys
	1235					1240					1245			
Phe	Tyr	Lys	Ile	Arg	Leu	Pro	Glu	Arg	Glu	Lys	Pro	Asp	Arg	Glu
	1250					1255					1260			
Arg	Asn	Ala	Arg	Arg	Glu	Pro	Leu	Tyr	Arg	Val	Ile	Ala	Thr	Asp
	1265					1270					1275			
Lys	Asp	Glu	Gly	Pro	Asn	Ala	Glu	Ile	Ser	Tyr	Ser	Ile	Glu	Asp
	1280					1285					1290			
Gly	Asn	Glu	His	Gly	Lys	Phe	Phe	Ile	Glu	Pro	Lys	Thr	Gly	Val



## FBRIC54.003APC\_Sequence Listing.txt

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1295                               1300                               1305
Val Ser Ser Lys Arg Phe Ser Ala Ala Gly Glu Tyr Asp Ile Leu
1310                               1315                               1320

Ser Ile Lys Ala Val Asp Asn Gly Arg Pro Gln Lys Ser Ser Thr
1325                               1330                               1335

Thr Arg Leu His Ile Glu Trp Ile Ser Lys Pro Lys Gln Ser Leu
1340                               1345                               1350

Glu Pro Ile Ser Phe Glu Glu Ser Phe Phe Thr Phe Thr Val Met
1355                               1360                               1365

Glu Ser Asp Pro Val Ala His Met Ile Gly Val Ile Ser Val Glu
1370                               1375                               1380

Pro Pro Gly Ile Pro Leu Trp Phe Asp Ile Thr Gly Gly Asn Tyr
1385                               1390                               1395

Asp Ser His Phe Asp Val Asp Lys Gly Thr Gly Thr Ile Ile Val
1400                               1405                               1410

Ala Lys Pro Leu Asp Ala Glu Gln Lys Ser Asn Tyr Asn Leu Thr
1415                               1420                               1425

Val Glu Ala Thr Asp Gly Thr Thr Thr Ile Leu Thr Gln Val Phe
1430                               1435                               1440

Ile Lys Val Ile Asp Thr Asn Asp His Arg Pro Gln Phe Ser Thr
1445                               1450                               1455

Ser Lys Tyr Glu Val Val Ile Pro Glu Asp Thr Ala Pro Glu Thr
1460                               1465                               1470

Glu Ile Leu Gln Ile Ser Ala Val Asp Gln Asp Glu Lys Asn Lys
1475                               1480                               1485

Leu Ile Tyr Thr Leu Gln Ser Ser Arg Asp Pro Leu Ser Leu Lys
1490                               1495                               1500

Lys Phe Arg Leu Asp Pro Ala Thr Gly Ser Leu Tyr Thr Ser Glu
1505                               1510                               1515

Lys Leu Asp His Glu Ala Val Ser Pro Ala His Leu Thr Val Met
1520                               1525                               1530

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FBRIC54.003APC\_Sequence Listing.txt

Val	Arg	Asp	Gln	Asp	Val	Pro	Val	Lys	Arg	Asn	Phe	Ala	Arg	Ile
1535						1540					1545			
Val	Val	Asn	Val	Ser	Asp	Thr	Asn	Asp	His	Ala	Pro	Trp	Phe	Thr
1550						1555					1560			
Ala	Ser	Ser	Tyr	Lys	Gly	Arg	Val	Tyr	Glu	Ser	Ala	Ala	Val	Gly
1565						1570					1575			
Ser	Val	Val	Leu	Gln	Val	Thr	Ala	Leu	Asp	Lys	Asp	Lys	Gly	Lys
1580						1585					1590			
Asn	Ala	Glu	Val	Leu	Tyr	Ser	Ile	Glu	Ser	Gly	Asn	Ile	Gly	Asn
1595						1600					1605			
Ile	Gly	Asn	Ser	Phe	Met	Ile	Asp	Pro	Val	Leu	Gly	Ser	Ile	Lys
1610						1615					1620			
Thr	Ala	Lys	Glu	Leu	Asp	Arg	Ser	Asn	Gln	Ala	Glu	Tyr	Asp	Leu
1625						1630					1635			
Met	Val	Lys	Ala	Thr	Asp	Lys	Gly	Ser	Pro	Pro	Met	Ser	Glu	Ile
1640						1645					1650			
Thr	Ser	Val	Arg	Ile	Phe	Val	Thr	Ile	Ala	Asp	Asn	Ala	Ser	Pro
1655						1660					1665			
Lys	Phe	Thr	Ser	Lys	Glu	Tyr	Ser	Val	Glu	Leu	Ser	Glu	Thr	Val
1670						1675					1680			
Ser	Ile	Gly	Ser	Phe	Val	Gly	Met	Val	Thr	Ala	His	Ser	Gln	Ser
1685						1690					1695			
Ser	Val	Val	Tyr	Glu	Ile	Lys	Asp	Gly	Asn	Thr	Gly	Asp	Ala	Phe
1700						1705					1710			
Asp	Ile	Asn	Pro	His	Ser	Gly	Thr	Ile	Ile	Thr	Gln	Lys	Ala	Leu
1715						1720					1725			
Asp	Phe	Glu	Thr	Leu	Pro	Ile	Tyr	Thr	Leu	Ile	Ile	Gln	Gly	Thr
1730						1735					1740			
Asn	Met	Ala	Gly	Leu	Ser	Thr	Asn	Thr	Thr	Val	Leu	Val	His	Leu
1745						1750					1755			
Gln	Asp	Glu	Asn	Asp	Asn	Ala	Pro	Val	Phe	Met	Gln	Ala	Glu	Tyr
1760						1765					1770			

FBRIC54.003APC\_Sequence Listing.txt

Thr	Gly	Leu	Ile	Ser	Glu	Ser	Ala	Ser	Ile	Asn	Ser	Val	Val	Leu
	1775					1780					1785			
Thr	Asp	Arg	Asn	Val	Pro	Leu	Val	Ile	Arg	Ala	Ala	Asp	Ala	Asp
	1790					1795					1800			
Lys	Asp	Ser	Asn	Ala	Leu	Leu	Val	Tyr	His	Ile	Val	Glu	Pro	Ser
	1805					1810					1815			
Val	His	Thr	Tyr	Phe	Ala	Ile	Asp	Ser	Ser	Thr	Gly	Ala	Ile	His
	1820					1825					1830			
Thr	Val	Leu	Ser	Leu	Asp	Tyr	Glu	Glu	Thr	Ser	Ile	Phe	His	Phe
	1835					1840					1845			
Thr	Val	Gln	Val	His	Asp	Met	Gly	Thr	Pro	Arg	Leu	Phe	Ala	Glu
	1850					1855					1860			
Tyr	Ala	Ala	Asn	Val	Thr	Val	His	Val	Ile	Asp	Ile	Asn	Asp	Cys
	1865					1870					1875			
Pro	Pro	Val	Phe	Ala	Lys	Pro	Leu	Tyr	Glu	Ala	Ser	Leu	Leu	Leu
	1880					1885					1890			
Pro	Thr	Tyr	Lys	Gly	Val	Lys	Val	Ile	Thr	Val	Asn	Ala	Thr	Asp
	1895					1900					1905			
Ala	Asp	Ser	Ser	Ala	Phe	Ser	Gln	Leu	Ile	Tyr	Ser	Ile	Thr	Glu
	1910					1915					1920			
Gly	Asn	Ile	Gly	Glu	Lys	Phe	Ser	Met	Asp	Tyr	Lys	Thr	Gly	Ala
	1925					1930					1935			
Leu	Thr	Val	Gln	Asn	Thr	Thr	Gln	Leu	Arg	Ser	Arg	Tyr	Glu	Leu
	1940					1945					1950			
Thr	Val	Arg	Ala	Ser	Asp	Gly	Arg	Phe	Ala	Gly	Leu	Thr	Ser	Val
	1955					1960					1965			
Lys	Ile	Asn	Val	Lys	Glu	Ser	Lys	Glu	Ser	His	Leu	Lys	Phe	Thr
	1970					1975					1980			
Gln	Asp	Val	Tyr	Ser	Ala	Val	Val	Lys	Glu	Asn	Ser	Thr	Glu	Ala
	1985					1990					1995			
Glu	Thr	Leu	Ala	Val	Ile	Thr	Ala	Ile	Gly	Ser	Pro	Ile	Asn	Glu
	2000					2005					2010			

FBRIC54.003APC\_Sequence Listing.txt

Pro	Leu	Phe	Tyr	His	Ile	Leu	Asn	Pro	Asp	Arg	Arg	Phe	Lys	Ile
	2015					2020					2025			
Ser	Arg	Thr	Ser	Gly	Val	Leu	Ser	Thr	Thr	Gly	Thr	Pro	Phe	Asp
	2030					2035					2040			
Arg	Glu	Gln	Gln	Glu	Ala	Phe	Asp	Val	Val	Val	Glu	Val	Ile	Glu
	2045					2050					2055			
Glu	His	Lys	Pro	Ser	Ala	Val	Ala	His	Val	Val	Val	Lys	Val	Ile
	2060					2065					2070			
Val	Glu	Asp	Gln	Asn	Asp	Asn	Ala	Pro	Val	Phe	Val	Asn	Leu	Pro
	2075					2080					2085			
Tyr	Tyr	Ala	Val	Val	Lys	Val	Asp	Thr	Glu	Val	Gly	His	Val	Ile
	2090					2095					2100			
Arg	Tyr	Val	Thr	Ala	Val	Asp	Arg	Asp	Ser	Gly	Arg	Asn	Gly	Glu
	2105					2110					2115			
Val	His	Tyr	Tyr	Leu	Lys	Glu	His	His	Glu	His	Phe	Gln	Ile	Gly
	2120					2125					2130			
Pro	Leu	Gly	Glu	Ile	Ser	Leu	Lys	Lys	Gln	Phe	Glu	Leu	Asp	Thr
	2135					2140					2145			
Leu	Asn	Lys	Glu	Tyr	Leu	Val	Thr	Val	Val	Ala	Lys	Asp	Gly	Gly
	2150					2155					2160			
Asn	Pro	Ala	Phe	Ser	Ala	Glu	Val	Ile	Val	Pro	Ile	Thr	Val	Met
	2165					2170					2175			
Asn	Lys	Ala	Met	Pro	Val	Phe	Glu	Lys	Pro	Phe	Tyr	Ser	Ala	Glu
	2180					2185					2190			
Ile	Ala	Glu	Ser	Ile	Gln	Val	His	Ser	Pro	Val	Val	His	Val	Gln
	2195					2200					2205			
Ala	Asn	Ser	Pro	Glu	Gly	Leu	Lys	Val	Phe	Tyr	Ser	Ile	Thr	Asp
	2210					2215					2220			
Gly	Asp	Pro	Phe	Ser	Gln	Phe	Thr	Ile	Asn	Phe	Asn	Thr	Gly	Val
	2225					2230					2235			
Ile	Asn	Val	Ile	Ala	Pro	Leu	Asp	Phe	Glu	Ala	His	Pro	Ala	Tyr

FBRIC54.003APC\_Sequence Listing.txt

2240						2245					2250				
Lys	Leu	Ser	Ile	Arg	Ala	Thr	Asp	Ser	Leu	Thr	Gly	Ala	His	Ala	
	2255					2260					2265				
Glu	Val	Phe	Val	Asp	Ile	Ile	Val	Asp	Asp	Ile	Asn	Asp	Asn	Pro	
	2270					2275					2280				
Pro	Val	Phe	Ala	Gln	Gln	Ser	Tyr	Ala	Val	Thr	Leu	Ser	Glu	Ala	
	2285					2290					2295				
Ser	Val	Ile	Gly	Thr	Ser	Val	Val	Gln	Val	Arg	Ala	Thr	Asp	Ser	
	2300					2305					2310				
Asp	Ser	Glu	Pro	Asn	Arg	Gly	Ile	Ser	Tyr	Gln	Met	Phe	Gly	Asn	
	2315					2320					2325				
His	Ser	Lys	Ser	His	Asp	His	Phe	His	Val	Asp	Ser	Ser	Thr	Gly	
	2330					2335					2340				
Leu	Ile	Ser	Leu	Leu	Arg	Thr	Leu	Asp	Tyr	Glu	Gln	Ser	Arg	Gln	
	2345					2350					2355				
His	Thr	Ile	Phe	Val	Arg	Ala	Val	Asp	Gly	Gly	Met	Pro	Thr	Leu	
	2360					2365					2370				
Ser	Ser	Asp	Val	Ile	Val	Thr	Val	Asp	Val	Thr	Asp	Leu	Asn	Gly	
	2375					2380					2385				
Asn	Pro	Pro	Leu	Phe	Glu	Gln	Gln	Ile	Tyr	Glu	Ala	Arg	Ile	Ser	
	2390					2395					2400				
Glu	His	Ala	Pro	His	Gly	His	Phe	Val	Thr	Cys	Val	Lys	Ala	Tyr	
	2405					2410					2415				
Asp	Ala	Asp	Ser	Ser	Asp	Ile	Asp	Lys	Leu	Gln	Tyr	Ser	Ile	Leu	
	2420					2425					2430				
Ser	Gly	Asn	Asp	His	Lys	His	Phe	Val	Ile	Asp	Ser	Ala	Thr	Gly	
	2435					2440					2445				
Ile	Ile	Thr	Leu	Ser	Asn	Leu	His	Arg	His	Ala	Leu	Lys	Pro	Phe	
	2450					2455					2460				
Tyr	Ser	Leu	Asn	Leu	Ser	Val	Ser	Asp	Gly	Val	Phe	Arg	Ser	Ser	
	2465					2470					2475				

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Thr	Gln	Val	His	Val	Thr	Val	Ile	Gly	Gly	Asn	Leu	His	Ser	Pro
2480						2485					2490			
Ala	Phe	Leu	Gln	Asn	Glu	Tyr	Glu	Val	Glu	Leu	Ala	Glu	Asn	Ala
2495						2500					2505			
Pro	Leu	His	Thr	Leu	Val	Met	Glu	Val	Lys	Thr	Thr	Asp	Gly	Asp
2510						2515					2520			
Ser	Gly	Ile	Tyr	Gly	His	Val	Thr	Tyr	His	Ile	Val	Asn	Asp	Phe
2525						2530					2535			
Ala	Lys	Asp	Arg	Phe	Tyr	Ile	Asn	Glu	Arg	Gly	Gln	Ile	Phe	Thr
2540						2545					2550			
Leu	Glu	Lys	Leu	Asp	Arg	Glu	Thr	Pro	Ala	Glu	Lys	Val	Ile	Ser
2555						2560					2565			
Val	Arg	Leu	Met	Ala	Lys	Asp	Ala	Gly	Gly	Lys	Val	Ala	Phe	Cys
2570						2575					2580			
Thr	Val	Asn	Val	Ile	Leu	Thr	Asp	Asp	Asn	Asp	Asn	Ala	Pro	Gln
2585						2590					2595			
Phe	Arg	Ala	Thr	Lys	Tyr	Glu	Val	Asn	Ile	Gly	Ser	Ser	Ala	Ala
2600						2605					2610			
Lys	Gly	Thr	Ser	Val	Val	Lys	Ser	Ala	Ser	Asp	Ala	Asp	Glu	Gly
2615						2620					2625			
Ser	Asn	Ala	Asp	Ile	Thr	Tyr	Ala	Ile	Glu	Ala	Asp	Ser	Glu	Ser
2630						2635					2640			
Val	Lys	Glu	Asn	Leu	Glu	Ile	Asn	Lys	Leu	Ser	Gly	Val	Ile	Thr
2645						2650					2655			
Thr	Lys	Glu	Ser	Leu	Ile	Gly	Leu	Glu	Asn	Glu	Phe	Phe	Thr	Phe
2660						2665					2670			
Phe	Val	Arg	Ala	Val	Asp	Asn	Gly	Ser	Pro	Ser	Lys	Glu	Ser	Val
2675						2680					2685			
Val	Leu	Val	Tyr	Val	Lys	Ile	Leu	Pro	Pro	Glu	Met	Gln	Leu	Pro
2690						2695					2700			
Lys	Phe	Ser	Glu	Pro	Phe	Tyr	Thr	Phe	Thr	Val	Ser	Glu	Asp	Val
2705						2710					2715			

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Pro	Val	Gly	Thr	Glu	Ile	Asp	Leu	Ile	Arg	Ala	Glu	His	Ser	Gly
	2720					2725					2730			
Thr	Val	Leu	Tyr	Ser	Leu	Val	Lys	Gly	Asn	Thr	Pro	Glu	Ser	Asn
	2735					2740					2745			
Arg	Asp	Glu	Ser	Phe	Val	Ile	Asp	Arg	Gln	Ser	Gly	Arg	Leu	Lys
	2750					2755					2760			
Leu	Glu	Lys	Ser	Leu	Asp	His	Glu	Thr	Thr	Lys	Trp	Tyr	Gln	Phe
	2765					2770					2775			
Ser	Ile	Leu	Ala	Arg	Cys	Thr	Gln	Asp	Asp	His	Glu	Met	Val	Ala
	2780					2785					2790			
Ser	Val	Asp	Val	Ser	Ile	Gln	Val	Lys	Asp	Ala	Asn	Asp	Asn	Ser
	2795					2800					2805			
Pro	Val	Phe	Glu	Ser	Ser	Pro	Tyr	Glu	Ala	Phe	Ile	Val	Glu	Asn
	2810					2815					2820			
Leu	Pro	Gly	Gly	Ser	Arg	Val	Ile	Gln	Ile	Arg	Ala	Ser	Asp	Ala
	2825					2830					2835			
Asp	Ser	Gly	Thr	Asn	Gly	Gln	Val	Met	Tyr	Ser	Leu	Asp	Gln	Ser
	2840					2845					2850			
Gln	Ser	Val	Glu	Val	Ile	Glu	Ser	Phe	Ala	Ile	Asn	Met	Glu	Thr
	2855					2860					2865			
Gly	Trp	Ile	Thr	Thr	Leu	Lys	Glu	Leu	Asp	His	Glu	Lys	Arg	Asp
	2870					2875					2880			
Asn	Tyr	Gln	Ile	Lys	Val	Val	Ala	Ser	Asp	His	Gly	Glu	Lys	Ile
	2885					2890					2895			
Gln	Leu	Ser	Ser	Thr	Ala	Ile	Val	Asp	Val	Thr	Val	Thr	Asp	Val
	2900					2905					2910			
Asn	Asp	Ser	Pro	Pro	Arg	Phe	Thr	Ala	Glu	Ile	Tyr	Lys	Gly	Thr
	2915					2920					2925			
Val	Ser	Glu	Asp	Asp	Pro	Gln	Gly	Gly	Val	Ile	Ala	Ile	Leu	Ser
	2930					2935					2940			
Thr	Thr	Asp	Ala	Asp	Ser	Glu	Glu	Ile	Asn	Arg	Gln	Val	Thr	Tyr
	2945					2950					2955			

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Phe	Ile	Thr	Gly	Gly	Asp	Pro	Leu	Gly	Gln	Phe	Ala	Val	Glu	Thr
	2960					2965					2970			
Ile	Gln	Asn	Glu	Trp	Lys	Val	Tyr	Val	Lys	Lys	Pro	Leu	Asp	Arg
	2975					2980					2985			
Glu	Lys	Arg	Asp	Asn	Tyr	Leu	Leu	Thr	Ile	Thr	Ala	Thr	Asp	Gly
	2990					2995					3000			
Thr	Phe	Ser	Ser	Lys	Ala	Ile	Val	Glu	Val	Lys	Val	Leu	Asp	Ala
	3005					3010					3015			
Asn	Asp	Asn	Ser	Pro	Val	Cys	Glu	Lys	Thr	Leu	Tyr	Ser	Asp	Thr
	3020					3025					3030			
Ile	Pro	Glu	Asp	Val	Leu	Pro	Gly	Lys	Leu	Ile	Met	Gln	Ile	Ser
	3035					3040					3045			
Ala	Thr	Asp	Ala	Asp	Ile	Arg	Ser	Asn	Ala	Glu	Ile	Thr	Tyr	Thr
	3050					3055					3060			
Leu	Leu	Gly	Ser	Gly	Ala	Glu	Lys	Phe	Lys	Leu	Asn	Pro	Asp	Thr
	3065					3070					3075			
Gly	Glu	Leu	Lys	Thr	Ser	Thr	Pro	Leu	Asp	Arg	Glu	Glu	Gln	Ala
	3080					3085					3090			
Val	Tyr	His	Leu	Leu	Val	Arg	Ala	Thr	Asp	Gly	Gly	Gly	Arg	Phe
	3095					3100					3105			
Cys	Gln	Ala	Ser	Ile	Val	Val	Thr	Leu	Glu	Asp	Val	Asn	Asp	Asn
	3110					3115					3120			
Ala	Pro	Glu	Phe	Ser	Ala	Asp	Pro	Tyr	Ala	Ile	Thr	Val	Phe	Glu
	3125					3130					3135			
Asn	Thr	Glu	Pro	Gly	Thr	Leu	Leu	Thr	Arg	Val	Gln	Ala	Thr	Asp
	3140					3145					3150			
Ala	Asp	Ala	Gly	Leu	Asn	Arg	Lys	Ile	Leu	Tyr	Ser	Leu	Ile	Asp
	3155					3160					3165			
Ser	Ala	Asp	Gly	Gln	Phe	Ser	Ile	Asn	Glu	Leu	Ser	Gly	Ile	Ile
	3170					3175					3180			
Gln	Leu	Glu	Lys	Pro	Leu	Asp	Arg	Glu	Leu	Gln	Ala	Val	Tyr	Thr



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3185					3190					3195
Leu	Ser	Leu	Lys	Ala	Val	Asp	Gln	Gly	Leu	Pro
3200						3205				Arg
										Arg
										Leu
										Thr
Ala	Thr	Gly	Thr	Val	Ile	Val	Ser	Val	Leu	Asp
3215						3220				Ile
										Asn
										Asp
										Asn
Pro	Pro	Val	Phe	Glu	Tyr	Arg	Glu	Tyr	Gly	Ala
3230						3235				Thr
										Val
										Ser
										Glu
Asp	Ile	Leu	Val	Gly	Thr	Glu	Val	Leu	Gln	Val
3245						3250				Tyr
										Ala
										Ala
										Ser
Arg	Asp	Ile	Glu	Ala	Asn	Ala	Glu	Ile	Thr	Tyr
3260						3265				Ser
										Ile
										Ile
										Ser
Gly	Asn	Glu	His	Gly	Lys	Phe	Ser	Ile	Asp	Ser
3275						3280				Lys
										Thr
										Gly
										Ala
Val	Phe	Ile	Ile	Glu	Asn	Leu	Asp	Tyr	Glu	Ser
3290						3295				Ser
										His
										Glu
										Tyr
Tyr	Leu	Thr	Val	Glu	Ala	Thr	Asp	Gly	Gly	Thr
3305						3310				Pro
										Ser
										Leu
										Ser
Asp	Val	Ala	Thr	Val	Asn	Val	Asn	Val	Thr	Asp
3320						3325				Ile
										Asn
										Asp
										Asn
Thr	Pro	Val	Phe	Ser	Gln	Asp	Thr	Tyr	Thr	Thr
3335						3340				Val
										Ile
										Ser
										Glu
Asp	Ala	Val	Leu	Glu	Gln	Ser	Val	Ile	Thr	Val
3350						3355				Met
										Ala
										Asp
										Asp
Ala	Asp	Gly	Pro	Ser	Asn	Ser	His	Ile	His	Tyr
3365						3370				Ser
										Ile
										Ile
										Asp
Gly	Asn	Gln	Gly	Ser	Ser	Phe	Thr	Ile	Asp	Pro
3380						3385				Val
										Arg
										Gly
										Glu
Val	Lys	Val	Thr	Lys	Leu	Leu	Asp	Arg	Glu	Thr
3395						3400				Ile
										Ser
										Gly
										Tyr
Thr	Leu	Thr	Val	Gln	Ala	Ser	Asp	Asn	Gly	Ser
3410						3415				Pro
										Pro
										Arg
										Val

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Asn	Thr	Thr	Thr	Val	Asn	Ile	Asp	Val	Ser	Asp	Val	Asn	Asp	Asn
3425						3430					3435			
Ala	Pro	Val	Phe	Ser	Arg	Gly	Asn	Tyr	Ser	Val	Ile	Ile	Gln	Glu
3440						3445					3450			
Asn	Lys	Pro	Val	Gly	Phe	Ser	Val	Leu	Gln	Leu	Val	Val	Thr	Asp
3455						3460					3465			
Glu	Asp	Ser	Ser	His	Asn	Gly	Pro	Pro	Phe	Phe	Phe	Thr	Ile	Val
3470						3475					3480			
Thr	Gly	Asn	Asp	Glu	Lys	Ala	Phe	Glu	Val	Asn	Pro	Gln	Gly	Val
3485						3490					3495			
Leu	Leu	Thr	Ser	Ser	Ala	Ile	Lys	Arg	Lys	Glu	Lys	Asp	His	Tyr
3500						3505					3510			
Leu	Leu	Gln	Val	Lys	Val	Ala	Asp	Asn	Gly	Lys	Pro	Gln	Leu	Ser
3515						3520					3525			
Ser	Leu	Thr	Tyr	Ile	Asp	Ile	Arg	Val	Ile	Glu	Glu	Ser	Ile	Tyr
3530						3535					3540			
Pro	Pro	Ala	Ile	Leu	Pro	Leu	Glu	Ile	Phe	Ile	Thr	Ser	Ser	Gly
3545						3550					3555			
Glu	Glu	Tyr	Ser	Gly	Gly	Val	Ile	Gly	Lys	Ile	His	Ala	Thr	Asp
3560						3565					3570			
Gln	Asp	Val	Tyr	Asp	Thr	Leu	Thr	Tyr	Ser	Leu	Asp	Pro	Gln	Met
3575						3580					3585			
Asp	Asn	Leu	Phe	Ser	Val	Ser	Ser	Thr	Gly	Gly	Lys	Leu	Ile	Ala
3590						3595					3600			
His	Lys	Lys	Leu	Asp	Ile	Gly	Gln	Tyr	Leu	Leu	Asn	Val	Ser	Val
3605						3610					3615			
Thr	Asp	Gly	Lys	Phe	Thr	Thr	Val	Ala	Asp	Ile	Thr	Val	His	Ile
3620						3625					3630			
Arg	Gln	Val	Thr	Gln	Glu	Met	Leu	Asn	His	Thr	Ile	Ala	Ile	Arg
3635						3640					3645			
Phe	Ala	Asn	Leu	Thr	Pro	Glu	Glu	Phe	Val	Gly	Asp	Tyr	Trp	Arg
3650						3655					3660			

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Asn	Phe	Gln	Arg	Ala	Leu	Arg	Asn	Ile	Leu	Gly	Val	Arg	Arg	Asn
	3665					3670					3675			
Asp	Ile	Gln	Ile	Val	Ser	Leu	Gln	Ser	Ser	Glu	Pro	His	Pro	His
	3680					3685					3690			
Leu	Asp	Val	Leu	Leu	Phe	Val	Glu	Lys	Pro	Gly	Ser	Ala	Gln	Ile
	3695					3700					3705			
Ser	Thr	Lys	Gln	Leu	Leu	His	Lys	Ile	Asn	Ser	Ser	Val	Thr	Asp
	3710					3715					3720			
Ile	Glu	Glu	Ile	Ile	Gly	Val	Arg	Ile	Leu	Asn	Val	Phe	Gln	Lys
	3725					3730					3735			
Leu	Cys	Ala	Gly	Leu	Asp	Cys	Pro	Trp	Lys	Phe	Cys	Asp	Glu	Lys
	3740					3745					3750			
Val	Ser	Val	Asp	Glu	Ser	Val	Met	Ser	Thr	His	Ser	Thr	Ala	Arg
	3755					3760					3765			
Leu	Ser	Phe	Val	Thr	Pro	Arg	His	His	Arg	Ala	Ala	Val	Cys	Leu
	3770					3775					3780			
Cys	Lys	Glu	Gly	Arg	Cys	Pro	Pro	Val	His	His	Gly	Cys	Glu	Asp
	3785					3790					3795			
Asp	Pro	Cys	Pro	Glu	Gly	Ser	Glu	Cys	Val	Ser	Asp	Pro	Trp	Glu
	3800					3805					3810			
Glu	Lys	His	Thr	Cys	Val	Cys	Pro	Ser	Gly	Arg	Phe	Gly	Gln	Cys
	3815					3820					3825			
Pro	Gly	Ser	Ser	Ser	Met	Thr	Leu	Thr	Gly	Asn	Ser	Tyr	Val	Lys
	3830					3835					3840			
Tyr	Arg	Leu	Thr	Glu	Asn	Glu	Asn	Lys	Leu	Glu	Met	Lys	Leu	Thr
	3845					3850					3855			
Met	Arg	Leu	Arg	Thr	Tyr	Ser	Thr	His	Ala	Val	Val	Met	Tyr	Ala
	3860					3865					3870			
Arg	Gly	Thr	Asp	Tyr	Ser	Ile	Leu	Glu	Ile	His	His	Gly	Arg	Leu
	3875					3880					3885			
Gln	Tyr	Lys	Phe	Asp	Cys	Gly	Ser	Gly	Pro	Gly	Ile	Val	Ser	Val
	3890					3895					3900			

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Gln	Ser	Ile	Gln	Val	Asn	Asp	Gly	Gln	Trp	His	Ala	Val	Ala	Leu
	3905					3910					3915			
Glu	Val	Asn	Gly	Asn	Tyr	Ala	Arg	Leu	Val	Leu	Asp	Gln	Val	His
	3920					3925					3930			
Thr	Ala	Ser	Gly	Thr	Ala	Pro	Gly	Thr	Leu	Lys	Thr	Leu	Asn	Leu
	3935					3940					3945			
Asp	Asn	Tyr	Val	Phe	Phe	Gly	Gly	His	Ile	Arg	Gln	Gln	Gly	Thr
	3950					3955					3960			
Arg	His	Gly	Arg	Ser	Pro	Gln	Val	Gly	Asn	Gly	Phe	Arg	Gly	Cys
	3965					3970					3975			
Met	Asp	Ser	Ile	Tyr	Leu	Asn	Gly	Gln	Glu	Leu	Pro	Leu	Asn	Ser
	3980					3985					3990			
Lys	Pro	Arg	Ser	Tyr	Ala	His	Ile	Glu	Glu	Ser	Val	Asp	Val	Ser
	3995					4000					4005			
Pro	Gly	Cys	Phe	Leu	Thr	Ala	Thr	Glu	Asp	Cys	Ala	Ser	Asn	Pro
	4010					4015					4020			
Cys	Gln	Asn	Gly	Gly	Val	Cys	Asn	Pro	Ser	Pro	Ala	Gly	Gly	Tyr
	4025					4030					4035			
Tyr	Cys	Lys	Cys	Ser	Ala	Leu	Tyr	Ile	Gly	Thr	His	Cys	Glu	Ile
	4040					4045					4050			
Ser	Val	Asn	Pro	Cys	Ser	Ser	Asn	Pro	Cys	Leu	Tyr	Gly	Gly	Thr
	4055					4060					4065			
Cys	Val	Val	Asp	Asn	Gly	Gly	Phe	Val	Cys	Gln	Cys	Arg	Gly	Leu
	4070					4075					4080			
Tyr	Thr	Gly	Gln	Arg	Cys	Gln	Leu	Ser	Pro	Tyr	Cys	Lys	Asp	Glu
	4085					4090					4095			
Pro	Cys	Lys	Asn	Gly	Gly	Thr	Cys	Phe	Asp	Ser	Leu	Asp	Gly	Ala
	4100					4105					4110			
Val	Cys	Gln	Cys	Asp	Ser	Gly	Phe	Arg	Gly	Glu	Arg	Cys	Gln	Ser
	4115					4120					4125			
Asp	Ile	Asp	Glu	Cys	Ser	Gly	Asn	Pro	Cys	Leu	His	Gly	Ala	Leu

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4130													
	Cys	Glu	Asn	Thr	His	Gly	Ser	Tyr	His	Cys	Asn	Cys	Ser
	4145						4150					4155	
	Tyr	Arg	Gly	Arg	His	Cys	Glu	Asp	Ala	Ala	Pro	Asn	Gln
	4160						4165					4170	Tyr
													Val
	Ser	Thr	Pro	Trp	Asn	Ile	Gly	Leu	Ala	Glu	Gly	Ile	Gly
	4175						4180					4185	Ile
													Val
	Val	Phe	Val	Ala	Gly	Ile	Phe	Leu	Leu	Val	Val	Val	Phe
	4190						4195					4200	Val
													Leu
	Cys	Arg	Lys	Met	Ile	Ser	Arg	Lys	Lys	Lys	His	Gln	Ala
	4205						4210					4215	Glu
													Pro
	Lys	Asp	Lys	His	Leu	Gly	Pro	Ala	Thr	Ala	Phe	Leu	Gln
	4220						4225					4230	Arg
													Pro
	Tyr	Phe	Asp	Ser	Lys	Leu	Asn	Lys	Asn	Ile	Tyr	Ser	Asp
	4235						4240					4245	Ile
													Pro
	Pro	Gln	Val	Pro	Val	Arg	Pro	Ile	Ser	Tyr	Thr	Pro	Ser
	4250						4255					4260	Ile
													Pro
	Ser	Asp	Ser	Arg	Asn	Asn	Leu	Asp	Arg	Asn	Ser	Phe	Glu
	4265						4270					4275	Gly
													Ser
	Ala	Ile	Pro	Glu	His	Pro	Glu	Phe	Ser	Thr	Phe	Asn	Pro
	4280						4285					4290	Glu
													Ser
	Val	His	Gly	His	Arg	Lys	Ala	Val	Ala	Val	Cys	Ser	Val
	4295						4300					4305	Ala
													Pro
	Asn	Leu	Pro	Pro	Pro	Pro	Pro	Ser	Asn	Ser	Pro	Ser	Asp
	4310						4315					4320	Ser
													Asp
	Ser	Ile	Gln	Lys	Pro	Ser	Trp	Asp	Phe	Asp	Tyr	Asp	Thr
	4325						4330					4335	Lys
													Val
	Val	Asp	Leu	Asp	Pro	Cys	Leu	Ser	Lys	Lys	Pro	Leu	Glu
	4340						4345					4350	Glu
													Lys
	Pro	Ser	Gln	Pro	Tyr	Ser	Ala	Arg	Glu	Ser	Leu	Ser	Glu
	4355						4360					4365	Val
													Gln

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Ser	Leu	Ser	Ser	Phe	Gln	Ser	Glu	Ser	Cys	Asp	Asp	Asn	Glu	Ser
	4370					4375					4380			
Leu	Ala	Ala	Pro	Asp	Leu	Ser	Lys	Pro	Arg	Gly	Tyr	His	Trp	Asp
	4385					4390					4395			
Thr	Ser	Asp	Trp	Met	Pro	Ser	Val	Pro	Leu	Pro	Asp	Ile	Gln	Glu
	4400					4405					4410			
Phe	Pro	Asn	Tyr	Glu	Val	Ile	Asp	Glu	Gln	Thr	Pro	Leu	Tyr	Ser
	4415					4420					4425			
Ala	Asp	Pro	Asn	Ala	Ile	Asp	Thr	Asp	Tyr	Tyr	Pro	Gly	Gly	Tyr
	4430					4435					4440			
Asp	Ile	Glu	Ser	Asp	Phe	Pro	Pro	Pro	Pro	Glu	Asp	Phe	Pro	Ala
	4445					4450					4455			
Ala	Asp	Glu	Leu	Pro	Pro	Leu	Pro	Pro	Glu	Phe	Ser	Asn	Gln	Phe
	4460					4465					4470			
Glu	Ser	Ile	His	Pro	Pro	Arg	Asp	Met	Pro	Ala	Ala	Gly	Ser	Leu
	4475					4480					4485			
Gly	Ser	Ser	Ser	Arg	Asn	Arg	Gln	Arg	Phe	Asn	Leu	Asn	Gln	Tyr
	4490					4495					4500			
Leu	Pro	Asn	Phe	Tyr	Pro	Leu	Asp	Met	Ser	Glu	Pro	Gln	Thr	Lys
	4505					4510					4515			
Gly	Thr	Gly	Glu	Asn	Ser	Thr	Cys	Arg	Glu	Pro	His	Ala	Pro	Tyr
	4520					4525					4530			
Pro	Pro	Gly	Tyr	Gln	Arg	His	Phe	Glu	Ala	Pro	Ala	Val	Glu	Ser
	4535					4540					4545			
Met	Pro	Met	Ser	Val	Tyr	Ala	Ser	Thr	Ala	Ser	Cys	Ser	Asp	Val
	4550					4555					4560			
Ser	Ala	Cys	Cys	Glu	Val	Glu	Ser	Glu	Val	Met	Met	Ser	Asp	Tyr
	4565					4570					4575			
Glu	Ser	Gly	Asp	Asp	Gly	His	Phe	Glu	Glu	Val	Thr	Ile	Pro	Pro
	4580					4585					4590			
Leu	Asp	Ser	Gln	Gln	His	Thr	Glu	Val						
	4595					4600								

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 <211> 16781  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> FAT fragment

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gttaaccgcg aaggagtcct cctgacatca tctgccatca agaggaagga gaaagatcat     180
tacttactgc aggtgaaggt atgaatggct tcttttgagg tttggttggt gattcataga     240
gaagagctgc ttggcgtggt tccccctctt tatttgaaca gcttacattt catacaaaaa     300
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FBRIC54.003APC\_Sequence Listing.txt

ttatagaagc	agaatttcaa	cagttccttc	attgcagtct	ccttcattga	caaatatattt	13020
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FBRIC54.003APC\_Sequence Listing.txt

tttaagacca	gcctgggcaa	catagtgaga	ccctgtctct	ataaaaaata	gaaatgcaaa	14880
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FBRIC54.003APC\_Sequence Listing.txt

tagccagtct ttcttactga caataaatta ttaataaaat a 16781

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<211> 19  
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<213> artificial sequence

<220>  
<223> synthetic oligonucleotide

<400> 7  
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<210> 8  
<211> 20  
<212> DNA  
<213> artificial sequence

<220>  
<223> synthetic oligonucleotide

<400> 8  
ggaaagcctg tctgaagtgc 20

<210> 9  
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<220>  
<223> synthetic oligonucleotide

<400> 9  
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<210> 10  
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<220>  
<223> synthetic oligonucleotide

<400> 10  
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<210> 11  
<211> 20  
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<213> artificial sequence

<220>  
<223> synthetic oligonucleotide

<400> 11  
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FBRIC54.003APC\_Sequence Listing.txt

<210>	12	
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<223>	synthetic oligonucleotide	
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	tgtaaaacga cggccagt	18
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<220>		
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<400>	16	
	tgtaaaacga cggccagttt tccccagcag acattcat	38
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FBRIC54.003APC\_Sequence Listing.txt

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<213> artificial sequence

<220>
<223> synthetic oligonucleotide

<400> 17
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38

<210> 18
<211> 38
<212> DNA
<213> artificial sequence

<220>
<223> synthetic oligonucleotide

<400> 18
tgtaaaacga cggccagtat ggaaggctac atcaagca
38

<210> 19
<211> 18
<212> DNA
<213> artificial sequence

<220>
<223> synthetic oligonucleotide

<220>
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<222> (1)..(1)
<223> Cy5-conjugated base

<400> 19
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18

<210> 20
<211> 18
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<220>
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<220>
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<222> (1)..(2)
<223> Cy-5 conjugated base

<400> 20
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18

<210> 21
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FBRIC54.003APC\_Sequence Listing.txt

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<223>  microsatellite marker D4S1164

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ccaagatggg agtccaggct cgccatgatg gcatggctgc caaggaatt tctcctccta      180
aacacaaggt ccacttagat ccctctggtg gctgaga                                217

<210>  22
<211>  368
<212>  DNA
<213>  artificial sequence

<220>
<223>  microsatellite marker D4S910

<220>
<221>  misc_feature
<222>  (368)..(368)
<223>  n is a, c, g, or t

<400>  22
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ctgctcagac cctttctaac agcacagtgt gtgtttctct tgctccttca cagctgtatg      120
cactcaggag catggggaca cctcctttc atcttggtgt cctcttcaac atcctagcac      180
atgggcctga acgtaggagt ggctccatat gtgtggaatt ccaatgccta ggttttctgc      240
cttgctagaa aacaggcttt ttaagggtag gacaaaacta taagaaacat ttgtattgtt      300
ttatagtatt gaacatgttg cattatacag agctgatagt aaatattgaa ttgaatgaat      360
gaatgaan                                368

<210>  23
<211>  166
<212>  DNA
<213>  artificial sequence

<220>
<223>  microsatellite marker D4S3173

<400>  23
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tgagttcact gtgccagcat gcttcctcca cagtaacacg ctgaaggggc ttggtgtttg      120
taagaaaatg ctagaagaaa acaaactgtc acaagttgtt atgtcc                                166

<210>  24
<211>  260
<212>  DNA
<213>  artificial sequence

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FBRIC54.003APC\_Sequence Listing.txt

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<220>
<223>  microsatellite marker D4S3236

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<221>  misc_feature
<222>  (99)..(99)
<223>  n is a, c, g, or t

<220>
<221>  misc_feature
<222>  (253)..(253)
<223>  n is a, c, g, or t

<400>  24
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ctgacctggt ctggggtgag catggggctg aggccacana ggctggtctg gcctgtggag      120
gcctgaatcc tggtgctggg gtttactgga gtgggcttgg tgcttggaat ctgtggtgaa      180
gttaggttct atcttaactg tccctcctcc atgcaagagg gcatctctct ccatactgtg      240
ctgcccaggc ttnaagggtga                                          260

<210>  25
<211>  184
<212>  DNA
<213>  artificial sequence

<220>
<223>  microsatellite marker D4S2827

<220>
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<222>  (7)..(7)
<223>  n is a, c, g, or t

<220>
<221>  misc_feature
<222>  (13)..(13)
<223>  n is a, c, g, or t

<220>
<221>  misc_feature
<222>  (21)..(21)
<223>  n is a, c, g, or t

<220>
<221>  misc_feature
<222>  (27)..(27)
<223>  n is a, c, g, or t

<220>
<221>  misc_feature
<222>  (72)..(72)
<223>  n is a, c, g, or t

<220>
<221>  misc_feature

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FBRIC54.003APC\_Sequence Listing.txt

```

<222> (143)..(143)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (156)..(156)
<223> n is a, c, g, or t

<400> 25
ctctatncac ttncggcaat ncaattnaag gaatcagtct cagaagaaga gacgggagag      60
aaaatgcatt tncacggtgc tgaatattat ttaagttaat ggaggtgaat ttaagttggt      120
aggggtgcacg gtttaaaagc gtntcactt gcttnnatac tgagtagttt tgggtgcttat      180
tgag                                                                    184

<210> 26
<211> 492
<212> DNA
<213> artificial sequence

<220>
<223> microsatellite marker D4S1192

<220>
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<222> (115)..(115)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (302)..(302)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (402)..(403)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (411)..(411)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (441)..(441)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (455)..(455)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (462)..(462)
<223> n is a, c, g, or t

<220>

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FBRIC54.003APC\_Sequence Listing.txt

<221> misc\_feature  
<222> (465)..(467)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (471)..(471)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (475)..(475)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (477)..(477)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (479)..(481)  
<223> n is a, c, g, or t

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agtttttagt tttacatggt tacttatttt tagaggggaac atcactgggg ctttnggggg      120
cttaaactct tactatttct taaacatatt tcttaaacta aggatattta gatattgtct      180
tccatgtaca acttttaaatt cggttcagaa accccaggca agggatttct gtgtgtccta      240
acccttgaag ttaatgactt ctaattaact cagcaagaag ctaatgactt gtaagcactt      300
gncaattgat tcggagtatt ttctttgtaa gatgagtctg ggccggcgga actgggaagc      360
ctctggcaga gagaaggcac aggaggggtgg gggatggaaa cncatccaa ngatgagctc      420
tggaagatat ttagggcaaa nggaaagtat tgtnnggagc cnttnnnccc ncttntntnn      480
nccttcatga ct                                                                492
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<210> 27  
<211> 373  
<212> DNA  
<213> artificial sequence

<220>  
<223> microsatellite marker D4S1374

<220>  
<221> misc\_feature  
<222> (253)..(253)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (280)..(280)  
<223> n is a, c, g, or t

FBRIC54.003APC\_Sequence Listing.txt

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<220>
<221> misc_feature
<222> (317)..(317)
<223> n is a, c, g, or t

<400> 27
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attcaccgcc tctaaaccct atactcttat tttctgctgg aagtatgaaa agggaggaggaa    120
taaatgtagg aagaaaggaa actgcgaaaa tagggaggaa aagaacagag aagaggagag      180
agtggaatgg aaacaggaac aggacatttc tgaagggtat tatccactct tggctaaggt      240
gaagtagcag ctnattaggc tatggggaga cccagagcan cctcttttct tttagcaaac      300
ccccacgagc ttatggnnttt tccccagctt gggcagggtt cctattgaaa tctttctcct    360
ggagggatct tgc                                                           373

<210> 28
<211> 389
<212> DNA
<213> artificial sequence

<220>
<223> microsatellite marker D4S1375

<400> 28
gatcattata tgtcaggccc tgaagcaagt gttgtacaaa cattacatcg tttaatcctc      60
tcagcaatcc agtaaagcag ttgttattat caccatttta cagagggaga aactgagggt      120
caaagtgagc aaattgactt gctcaaaccc aaacagctag aaaatgataa ggctgccatg      180
caatcctggg cttattttat ccctaagcct gcattccatt tcctacaaat aaagagatag      240
ttttgggggtg ggaaagttct gataaaggag tggggagact gattgcccct gcacaagctt     300
cccattccat ttacatatat taggcccttt agcctccagg gtttgaatca gagctgggca      360
ggtgacaaaag gaggactagg aagccgagc                                       389

<210> 29
<211> 333
<212> DNA
<213> artificial sequence

<220>
<223> microsatellite marker D4S3051

<220>
<221> misc_feature
<222> (3)..(3)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (32)..(32)
<223> n is a, c, g, or t

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FBRIC54.003APC\_Sequence Listing.txt

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<220>
<221> misc_feature
<222> (253)..(253)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (322)..(322)
<223> n is a, c, g, or t

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aaaagtcata atgatgacta ctgaaatgat ttgaaatca gtagttattc ttgtataaaag      120
gaggattttg aagatccaat gtcttttatc aaacatctca ccagtaaatt aagaagatct      180
aaatcttgcc acacacacac acacacacac acacacacac acccttatgc tttaaaatct      240
atctttccaa tgnngttccc actgcacatc ttgaggggat cttctctgga tttccacata      300
agcattgttc aggaaatgct tntcagcaga gct                                     333

<210> 30
<211> 253
<212> DNA
<213> artificial sequence

<220>
<223> microsatellite marker D4S2643

<220>
<221> misc_feature
<222> (168)..(168)
<223> n is a, c, g, or t

<400> 30
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atatattgtc caataactct tttcctaaca atacaatgac catctttaat atgttaaggt      120
ctattttcac atccaattca ggactaatct ctgctaaagt accttctntt ctcaccttac      180
ccaaatcaag taacccttta cctagatgaa actctccatt tggccaagat tgatatagga      240
atcagtaatt agg                                                         253

<210> 31
<211> 6
<212> PRT
<213> artificial sequence

<220>
<223> synthetic peptide

<400> 31
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1          5

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FBRIC54.003APC\_Sequence Listing.txt

<210>	32	
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<212>	DNA	
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<223>	synthetic oligonucleotide	
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<210>	33	
<211>	24	
<212>	DNA	
<213>	artificial sequence	
<220>		
<223>	synthetic oligonucleotide	
<400>	33	
	gctgagtcac agaaaggctg gtta	24
<210>	34	
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<212>	DNA	
<213>	artificial sequence	
<220>		
<223>	synthetic oligonucleotide	
<400>	34	
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<210>	35	
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<212>	DNA	
<213>	artificial sequence	
<220>		
<223>	synthetic oligonucleotide	
<400>	35	
	caagtgagtc catttgtttt tg	22
<210>	36	
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<223>	synthetic oligonucleotide	
<400>	36	
	tgtgctggaa acagagaaca gggt	24
<210>	37	

FBRIC54.003APC\_Sequence Listing.txt

<211>	24	
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<220>		
<223>	synthetic oligonucleotide	
<400>	37	
	acagtgccat agacaaaggt gatt	24
<210>	38	
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<212>	DNA	
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<220>		
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<400>	38	
	gcaccccttg agactgattt ag	22
<210>	39	
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	atctgtggag attgatgaca ttg	24
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<400>	40	
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<400>	41	
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FBRIC54.003APC\_Sequence Listing.txt

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<220>
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cctctacact ggcaaacaaa gc                                22

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<220>
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<400>  43
ttacagacct cggagaataa agat                                24

<210>  44
<211>  24
<212>  DNA
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<220>
<223>  synthetic oligonucleotide

<400>  44
atgacgctat gaaaaggtat gaac                                24

<210>  45
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<212>  DNA
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<220>
<223>  synthetic oligonucleotide

<400>  45
ttgtttgccca gtgtagagga ttat                                24

<210>  46
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<212>  DNA
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<220>
<223>  synthetic oligonucleotide

<400>  46
atgacgctat gaaaaggtat gaac                                24

<210>  47
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<220>
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FBRIC54.003APC\_Sequence Listing.txt

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<400> 51	
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<400> 52	
aaaattactt ctgaactttt tctt	24

FBRIC54.003APC\_Sequence Listing.txt

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<210> 53
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<212> DNA
<213> artificial sequence

<220>
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<400> 53
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<210> 54
<211> 31
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<220>
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<400> 54
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<220>
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<400> 55
aatcacagcc tgaaaacaca 20

<210> 56
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<220>
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<400> 56
acgttggatg tactgacaag ttcaaacacc 30

<210> 57
<211> 30
<212> DNA
<213> artificial sequence

<220>
<223> synthetic oligonucleotide

<400> 57
acgttggatg ttgcatgaat gtctgctggg 30

<210> 58

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FBRIC54.003APC\_Sequence Listing.txt

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 <210> 59  
 <211> 22  
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 ccgccgttgt gttgttcttt tg 22  
  
  
 <210> 60  
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 <212> DNA  
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 <220>  
 <223> synthetic oligonucleotide  
  
 <400> 60  
 aacgacgcta acaccaccac ac 22  
  
  
 <210> 61  
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 <400> 61  
 aactttggca ttgtggaagg g 21  
  
  
 <210> 62  
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 <223> synthetic oligonucleotide  
  
 <400> 62  
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 <210> 63  
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FBRIC54.003APC\_Sequence Listing.txt

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<220>
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<400>  63
tggaatggg tcagaaggac tc                                22

<210>  64
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<220>
<223>  synthetic oligonucleotide

<400>  64
ggcatcttt tcacggttg c                                  21

<210>  65
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<212>  DNA
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<220>
<223>  synthetic oligonucleotide

<400>  65
gctggtgaaa aggaccttc g                                21

<210>  66
<211>  22
<212>  DNA
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<220>
<223>  synthetic oligonucleotide

<400>  66
ctggcaacat caacaggact cc                                22

<210>  67
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<212>  DNA
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<220>
<223>  synthetic oligonucleotide

<400>  67
ttcttcgttt gagtttgtaa ggtg                                24

<210>  68
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<212>  DNA
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<220>
<223>  synthetic oligonucleotide

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FBRIC54.003APC\_Sequence Listing.txt

<400> 68  
gttaagaaag ttgcgaggaa gatt 24

<210> 69  
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<220>  
<223> synthetic oligonucleotide

<400> 69  
ttcttcgttt gagtttgtaa ggtg 24

<210> 70  
<211> 22  
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<220>  
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<400> 70  
ctattttccc cagcagacat tc 22

<210> 71  
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<220>  
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<400> 71  
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<210> 72  
<211> 19  
<212> PRT  
<213> artificial sequence

<220>  
<223> synthetic peptide derived from FAT

<400> 72  
Ser Lys Pro Lys Pro Ser Ser Glu Pro Ile Ser Phe Glu Glu Ser Val  
1 5 10 15  
Phe Ser Cys